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*Withdrawn for publication elsewhere.

† Paper not received in time for publication.

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Second Annual Meeting, Champaign, Ill., Nov. 11-13, 1890. (The same officers in charge of this meeting.)

Third Annual Meeting, Washington, D. C., Aug. 17-18, 1891. President, James Hatcher; First Vice-President, F. H. Snow; Second Vice-President, Herbert Osborn; Secretary, L. O. Howard.

Fourth Annual Meeting, Rochester, N. Y., Aug. 15-16, 1892. President, J. A. Putner; First Vice-President, S. A. Forbes; Second Vice-President, J. H. Comstock; Secretary, F. M. Webster.

Fifth Annual Meeting, Madison, Wis., Aug. 14-16, 1893. President, S. A. Forbes; First Vice-President, C. J. S. Bethune; Second Vice-President, John B. Smith; Secretary, H. Garman.

Sixth Annual Meeting, Brooklyn, N. Y., Aug. 14-15, 1894. President, L. O. Howard; First Vice-President, John B. Smith; Second Vice-President, F. L. Harvey; Secretary, C. P. Gillette.

Seventh Annual Meeting, Springfield, Mass., Aug. 27-28, 1895. President, John B. Smith; First Vice-President, C. H. Fernald; Secretary, C. L. Marlatt.

Eighth Annual Meeting, Buffalo, N. Y., Aug. 21-22, 1896. President, C. H. Fernald; First Vice-President, F. M. Webster; Second Vice-President, Herbert Osborn; Secretary, C. L. Marlatt.

Ninth Annual Meeting, Detroit, Mich., Aug. 12-13, 1897. President, F. M. Webster; First Vice-President, Herbert Osborn; Second Vice-President, Lawrence Bruner; Secretary, C. L. Marlatt.

Tenth Annual Meeting, Boston, Mass., Aug. 19-20, 1898. President, Herl Osborn; First Vice-President, Lawrence Bruner; Second Vice-President, C. P. Gillette; Secretary, C. L. Marlatt.

Eleventh Annual Meeting, Columbus, Ohio, Aug., 18-19, 1899. President, C. Marlatt; First Vice-President, Lawrence Bruner; Second Vice-President, C. Gillette; Secretary, A. H. Kirkland.

Twelfth Annual Meeting, New York, N. Y., June 22-23, 1900. President, Lawrence Bruner; First Vice-President, C. P. Gillette; Second Vice-President, E. Forbush; Secretary, A. H. Kirkland.

Thirteenth Annual Meeting, Denver, Colo., Aug. 23-24, 1901. President, C. Gillette; First Vice-President, A. D. Hopkins; Second Vice-President, E. P. Felt; Secretary, A. L. Quaintance.

Fourteenth Annual Meeting, Pittsburgh, Pa., June 27-28, 1902. President, A. Hopkins; First Vice-President, E. P. Felt; Second Vice-President, T. D. A. Cocker; Secretary, A. L. Quaintance.

Fifteenth Annual Meeting, Washington, D. C., Dec. 26-27, 1902. President, E. P. Felt; First Vice-President, W. H. Ashmead; Second Vice-President, Lawrence Bruner; Secretary, A. L. Quaintance.

Sixteenth Annual Meeting, St. Louis, Mo., Dec. 29-31, 1903. President, M. Slingerland; First Vice-President, C. M. Weed; Second Vice-President, Henry Slinger; Secretary, A. F. Burgess.

Seventeenth Annual Meeting, Philadelphia, Pa., Dec. 29-30, 1904. President, A. L. Quaintance; First Vice-President, A. F. Burgess; Second Vice-President, M. E. Murtfeldt; Secretary, H. E. Summers.

Eighteenth Annual Meeting, New Orleans, La., Jan. 1-4, 1906. President, Garman; First Vice-President, E. D. Sanderson; Second Vice-President, F. L. Washburn; Secretary, H. E. Summers.

Nineteenth Annual Meeting, New York, N. Y., Dec. 28-29, 1906. President, A. H. Kirkland; First Vice-President, W. E. Britton; Second Vice-President, H. A. Morgan; Secretary, A. F. Burgess.

Twentieth Annual Meeting, Chicago, Ill., Dec. 27-28, 1907. President, H. A. Morgan; First Vice-President, H. E. Summers; Second Vice-President, W. D. Hunter; Secretary, A. F. Burgess.

Twenty-first Annual Meeting, Baltimore, Md., Dec. 28-29, 1908. President, S. A. Forbes; First Vice-President, W. E. Britton; Second Vice-President, E. D. Ball; Secretary, A. F. Burgess.

Twenty-second Annual Meeting, Boston, Mass., Dec. 28-29, 1909. President, W. E. Britton; First Vice-President, E. D. Ball; Second Vice-President, H. E. Summers; Secretary, A. F. Burgess.

Twenty-third Annual Meeting, Minneapolis, Minn., Dec. 28-29, 1910. President, E. D. Sanderson; First Vice-President, H. T. Fernald; Second Vice-President, F. J. Parrott; Secretary, A. F. Burgess.

Twenty-fourth Annual Meeting, Washington, D. C., Dec. 27-29, 1911. President, F. L. Washburn; First Vice-President, E. D. Ball; Second Vice-President, R. H. Pettit; Secretary, A. F. Burgess.

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- Ball, E. D., Agricultural Experiment Station, Logan, Utah.
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- Banks, Nathan, U. S. Bureau of Entomology, Washington, D. C.
- Barber, H. S., U. S. Bureau of Entomology, Washington, D. C.
- Benton, Frank, 925 N. St., N. W., Washington, D. C.
- Bethune, C. J. S., Guelph, Ontario, Canada.
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- Britton, W. E., New Haven, Conn.
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- Busck, August, U. S. National Museum, Washington, D. C.
- Caudell, A. N., U. S. National Museum, Washington, D. C.
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- Crawford, J. C., U. S. National Museum, Washington, D. C.
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- Davis, J. J., U. S. Bureau of Entomology, Lafayette, Ind.
- Dean, G. A., Agricultural Experiment Station, Manhattan, Kansas.
- Dyar, H. G., U. S. National Museum, Washington, D. C.
- Elehorn, E. M., Honolulu, H. T.
- Felt, E. P., Geological Hall, Albany, N. Y.
- Fernald, C. H., Agricultural College, Amherst, Mass.
- Fernald, H. T., Agricultural College, Amherst, Mass.
- Fiske, W. F., U. S. Bureau of Entomology, Melrose Highlands, Mass.
- Forbes, S. A., University of Illinois, Urbana, Ill.
- Foster, S. W., U. S. Bureau of Entomology, Washington, D. C.
- Franklin, H. J., Amherst, Mass.
- French, G. H., Carbondale, Ill.
- Gahan, A. B., Agricultural Experiment Station, College Park, Md.
- Garman, H., Agricultural Experiment Station, Lexington, Ky.
- Gibson, Arthur, Central Experimental Farm, Ottawa, Canada.
- Gillette, C. P., Agricultural Experiment Station, Fort Collins, Colo.
- Girault, A. A., Brisbane, Queensland, Australia.

- Gossard, H. A., Agricultural Experiment Station, Wooster, Ohio.
Gregson, P. B., R. F. D., No. 5, Richmond, Va.
Grossbeck, J. A., American Museum of Natural History, New York City.
Hammar, A. G., U. S. Bureau of Entomology, Washington, D. C.
Harned, R. W., Agricultural Experiment Station, Agricultural College, Miss.
Hart, C. A., State Entomologist's Office, Urbana, Ill.
Headlee, T. J., Agricultural Experiment Station, Manhattan, Kan.
Heidemann, Otto, U. S. National Museum, Washington, D. C.
Hermes, W. B., University of California, Berkeley, Cal.
Herrick, Glenn W., Cornell University, Ithaca, N. Y.
Hewitt, C. Gordon, Central Experimental Farm, Ottawa, Canada.
Hinds, W. E., Agricultural Experiment Station, Auburn, Ala.
Hine, J. S., Ohio State University, Columbus, Ohio.
Holland, W. J., Carnegie Museum, Pittsburgh, Pa.
Hooker, W. A., Office of Experiment Stations, Washington, D. C.
Hopkins, A. D., U. S. Bureau of Entomology, Washington, D. C.
Houghton, C. O., Agricultural Experiment Station, Newark, Del.
Houser, J. S., Agricultural Experiment Station, Wooster, Ohio.
Howard, L. O., U. S. Bureau of Entomology, Washington, D. C.
Hunter, S. J., University of Kansas, Lawrence, Kansas.
Hunter, W. D., U. S. Bureau of Entomology, Dallas, Texas.
Jennings, A. H., U. S. Bureau of Entomology, Dallas, Texas.
Johannsen, O. A., Agricultural Experiment Station, Orono, Me.
Johnson, Fred, U. S. Bureau of Entomology, Washington, D. C.
Johnson, S. A., Agricultural Experiment Station, Fort Collins, Colo.
Jones, P. R., U. S. Bureau of Entomology, Washington, D. C.
Kellogg, V. L., Stanford University, Cal.
Kelly, E. O. G., U. S. Bureau of Entomology, Wellington, Kansas.
Kineaid, Trevor, University of Washington, Seattle, Wash.
Kirkland, A. H., Huntington, Mass.
Kotinsky, J., Morestown, N. J.
Lochhead, Wm., MacDonald College of Agriculture, Montreal, Canada.
MacGillivray, A. D., University of Illinois, Urbana, Ill.
Marlatt, C. L., U. S. Bureau of Entomology, Washington, D. C.
Morgan, A. C., U. S. Bureau of Entomology, Clarksville, Tenn.
Morgan, H. A., Agricultural Experiment Station, Knoxville, Tenn.
Morrill, A. W., Phoenix, Ariz.
Moulton, Dudley, 11 Ferry Building, San Francisco, Cal.
Murfeldt, Mary E., Kirkwood, Mo.
Newell, Wilmon, Agricultural Experiment Station, College Station, Texas.
O'Kane, W. C., Agricultural Experiment Station, Durham, N. H.
Osborn, Herbert, Ohio State University, Columbus, Ohio.
Parrott, P. J., Agricultural Experiment Station, Geneva, N. Y.
Patch, Edith M., Agricultural Experiment Station, Orono, Me.
Pergand, Theo., U. S. Bureau of Entomology, Washington, D. C.
Perkins, R. C. L., Hawaiian Sugar Planters' Experiment Station, Honolulu, H. T.
Pettit, R. H., Agricultural Experiment Station, East Lansing, Mich.
Phillips, E. F., U. S. Bureau of Entomology, Washington, D. C.
Phillips, J. L., Staunton, Va.
Phillips, W. J., U. S. Bureau of Entomology, Washington, D. C.
Pierce, W. D., U. S. Bureau of Entomology, Dallas, Texas.
Quaintance, A. L., U. S. Bureau of Entomology, Washington, D. C.

Quayle, H. J., Whittier, Cal.
 Reeves, George L., U. S. Bureau of Entomology, Salt Lake City, Utah.
 Riley, W. A., Cornell University, Ithaca, N. Y.
 Ruggles, A. G., Agricultural Experiment Station, St. Anthony Park, Minn.
 Rumsey, W. E., Agricultural Experiment Station, Morgantown, W. Va.
 Russell, H. M., U. S. Bureau of Entomology, Washington, D. C.
 Sanborn, C. E., Agricultural Experiment Station, Stillwater, Okla.
 Sanders, J. G., Agricultural Experiment Station, Madison, Wis.
 Sanderson, E. D., University of West Virginia, Morgantown, W. Va.
 Saunders, Wm., Central Experimental Farm, Ottawa, Canada.
 Schwarz, E. A., U. S. National Museum, Washington, D. C.
 Sherman, Franklin, Jr., State Department of Agriculture, Raleigh, N. C.
 Skinner, Henry, Logan Square, Philadelphia, Pa.
 Smith, J. B., Agricultural Experiment Station, New Brunswick, N. J.
 Smith, R. L., Mayaguez, P. R.
 Stedman, J. M., Office of Experiment Stations, Washington, D. C.
 Summers, H. E., Agricultural Experiment Station, Ames, Iowa.
 Surface, H. A., State Zoologist, Harrisburg, Pa.
 Swenk, M. H., Agricultural Experiment Station, Lincoln, Neb.
 Swezey, O. H., Hawaiian Sugar Planters' Experiment Station, Honolulu, H. I.
 Symons, T. B., Agricultural Experiment Station, College Park, Md.
 Taylor, E. P., Parker, Kansas.
 Titus, E. G., Agricultural Experiment Station, Logan, Utah.
 Townsend, C. H. T., Lima, Peru.
 Troop, James, Agricultural Experiment Station, Lafayette, Ind.
 Van Dine, D. L., Rio Piedras, Porto Rico.
 Viereck, H. L., U. S. National Museum, Washington, D. C.
 Walden, B. H., New Haven, Conn.
 Washburn, F. L., Agricultural Experiment Station, St. Anthony Park, Minn.
 Webb, J. L., U. S. Bureau of Entomology, Washington, D. C.
 Webster, F. M., U. S. Bureau of Entomology, Washington, D. C.
 Webster, R. L., Agricultural Experiment Station, Ames, Iowa.
 Wheeler, W. M., Bussey Institution, Forest Hills, Boston, Mass.
 Wilson, H. F., Agricultural Experiment Station, Corvallis, Oregon.
 Woglum, R. S., U. S. Bureau of Entomology, Washington, D. C.
 Woodworth, C. W., University of California, Berkeley, Cal.
 Worsham, E. L., Capitol Building, Atlanta, Ga.
 Yothers, W. W., Orlando, Fla.

ASSOCIATE MEMBERS

Ainslie, G. G., U. S. Bureau of Entomology, Washington, D. C.
 Babcock, C. G., Agricultural Experiment Station, College Park, Md.
 Barber, T. C., U. S. Bureau of Entomology, Audubon Park, La.
 Barnes, Wm., Decatur, Ill.
 Bartholomew, C. E., Iowa State College, Ames, Iowa.
 Bentley, G. M., University of Tennessee, Knoxville, Tenn.
 Berger, E. W., Gainesville, Fla.
 Beutenmuller, Wm., American Museum of Natural History, New York City.
 Bourne, A. I., Agricultural Experiment Station, Amherst, Mass.
 Braucher, R. W., Cornell University, Ithaca, N. Y.
 Buck, J. E., Blacksburg, Va.

- Burrill, A. C., Madison, Wis.
 Caesar, Lawson, Guelph, Ontario, Canada.
 Caffrey, D. J., Agricultural Experiment Station, New Haven, Conn.
 Cardin, P. G., Santiago de las Vegas, Cuba.
 Champlain, A. B., Box 261, Harrisburg, Pa.
 Chase, W. W., Capitol Building, Atlanta, Ga.
 Clapp, S. C., State Department of Agriculture, Raleigh, N. C.
 Coad, B. R., U. S. Bureau of Entomology, Dallas, Texas.
 Coe, W. R., Yale University, New Haven, Conn.
 Collins, C. W., U. S. Bureau of Entomology, Melrose Highlands, Mass.
 Condit, I. J., California Polytechnic School, San Luis Obispo, Cal.
 Cory, E. N., Agricultural Experiment Station, College Park, Md.
 Couden, F. D., Pioneer Building, Seattle, Wash.
 Crampton, G. C., Massachusetts Agricultural College, Amherst, Mass.
 Criddle, Norman, Treesbank, Manitoba, Canada.
 Crossman, S. S., Amherst, Mass.
 Culver, J. J., U. S. Bureau of Entomology, Melrose Highlands, Mass.
 Currie, R. P., U. S. Bureau of Entomology, Washington, D. C.
 Cushman, R. A., U. S. Bureau of Entomology, Washington, D. C.
 Davidson, W. M., U. S. Bureau of Entomology, San José, Cal.
 Dickerson, E. L., 5 Broad Street, Newark, N. J.
 Doran, E. W., Louisiana Industrial Institute, Ruston, La.
 Douglas, B. W., Indianapolis, Ind.
 Engle, E. B., Office State Zoölogist, Harrisburg, Pa.
 Evans, Wm. E., Jr., Painesville, Ohio.
 Ewing, H. E., Agricultural Exp. Sta., Corvallis, Oregon.
 Farrar, E. R., South Lincoln, Mass.
 Fisher, W. S., Highspire, Pa.
 Frost, H. L., Arlington, Mass.
 Fullaway, D. T., Agricultural Experiment Station, Honolulu, H. T.
 Garrett, J. B., Agricultural Experiment Station, Baton Rouge, La.
 Gates, B. N., Amherst, Mass.
 Gifford, J. B., Coconut Grove, Fla.
 Gill, John B., U. S. Bureau of Entomology, Washington, D. C.
 Goodwin, W. H., Agricultural Experiment Station, Wooster, Ohio.
 Green, E. C., U. S. Bureau of Plant Industry, Brownsville, Texas.
 Hardenberg, C. B., Box 434, Pretoria, Transvaal, South Africa.
 Harrington, W. H., Post Office Department, Ottawa, Canada.
 Hartzell, F. Z., Agricultural Experiment Station, Geneva, N. Y.
 Huseman, Leonard, University of Missouri, Columbia, Mo.
 Hayhurst, Paul, Agricultural Experiment Station, Fayetteville, Ark.
 Herzog, P. H., Heightstown, New Jersey.
 High, Marvin M., U. S. Bureau of Entomology, Brownsville, Texas.
 Hodgkiss, H. E., Agricultural Experiment Station, Geneva, N. Y.
 Hoff, E. P., Georgetown, Idaho.
 Hollister, G. H., 272 Westland St., Hartford, Conn.
 Hollister, Wesley O., 634 East Congress St., Detroit, Mich.
 Holloway, T. E., U. S. Bureau of Entomology, Brownsville, Texas.
 Hood, C. E., Urbana, Ill.
 Hooker, C. W., Agricultural Experiment Station, Mayaguez, P. R.
 Horton, J. R., U. S. Bureau of Entomology, Lindsay, Cal.
 Hudson, G. H., Plattsburg, N. Y.

- lungerford, Herbert B., University of Kansas, Lawrence, Kansas.
lyslip, J. A., U. S. Bureau of Entomology, Pullman, Wash.
lingworth, J. F., 115 Linn St., Ithaca, N. Y.
lrvie, T. D., Guelph, Canada.
lunn, E. L., U. S. Bureau of Entomology, Washington, D. C.
lunstone, F. A., U. S. Bureau of Entomology, Washington, D. C.
lunes, C. R., Manila, P. I.
Lophart, Cornelia Ferris, Agricultural Experiment Station, Durham, N. H.
Loder, Nathaniel T., Milton, Mass.
Ling, G. B., Lawrence, Mass.
ling, W. Y., U. S. Bureau of Entomology, Washington, D. C.
linab, Frederick, U. S. National Museum, Washington, D. C.
Loebels, Albert, Alameda, Cal.
Lous, E. J., Agricultural Experiment Station, Corvallis, Ore.
Lewis, A. C., Capitol Building, Atlanta, Ga.
Lowe, F. W., Detroit, Mich.
Lackintosh, R. S., Caledonia, Minn.
Lann, B. P., 1918 Sunderland Place, Washington, D. C.
larsh, H. O., U. S. Bureau of Entomology, Washington, D. C.
leConnell, W. R., State College, Pa.
leGregor, E. A., U. S. Bureau of Entomology, Dallas, Texas.
leLaune, Leonard S., Amherst, Mass.
leMillan, D. K., Urbana, Ill.
lelander, A. L., Washington State College, Pullman, Wash.
leugh, C. S., U. S. Bureau of Entomology, Washington, D. C.
leendenhall, E. W., State Department of Agriculture, Columbus, Ohio.
leerrill, J. H., Agricultural Experiment Station, Manhattan, Kans.
leedall, Z. P., State Department of Agriculture, Raleigh, N. C.
leiliken, F. B., Agricultural Experiment Station, Manhattan, Kansas.
leorse, A. P., Wellesley, Mass.
leisher, E. H., U. S. Bureau of Entomology, Melrose Highlands, Mass.
lelson, J. A., U. S. Bureau of Entomology, Washington, D. C.
less, Henry, Jonesboro, Ark.
lelson, J. F., Agricultural Experiment Station, Stillwater, Okla.
lethland, O. W., University of Minnesota, Minneapolis, Minn.
leborn, H. T., U. S. Bureau of Entomology, Salt Lake City, Utah.
ledlock, F. B., College Station, Texas.
leine, C. T., Redlands, Cal.
lemer, R. M., Victoria, British Columbia, Canada.
leker, J. R., Agricultural Experiment Station, Bozeman, Mont.
lelman, D. C., U. S. Bureau of Entomology, Dallas, Texas.
lears, L. M., University of West Virginia, Morgantown, W. Va.
lellbrook, E. E., Portland, Me.
leke, Asa O., 14 Winter St., Saco, Me.
leikus, Harry, U. S. Bureau of Entomology, Dallas, Texas.
lepenoe, C. H., U. S. Bureau of Entomology, Washington, D. C.
leice, W. J., Jr., Agricultural Experiment Station, Blacksburg, Va.
leandall, J. L., 707 Bijou Building, Pittsburg, Pa.
leane, F. W., 6 Beacon St., Boston, Mass.
leed, E. B., Esquimaux, British Columbia, Canada.
leed, W. V., Capitol Building, Atlanta, Ga.
leegan, W. S., Amherst, Mass.

- Ripley, E. P., Weston, Mass.
- Rogers, D. M., 6 Beacon St., Boston, Mass.
- Rolls, P. H., Agricultural Experiment Station, Gainesville, Fla.
- Runner, G. A., U. S. Bureau of Entomology, Washington, D. C.
- Safro, V. L., Agricultural College, Corvallis, Oregon.
- Sanford, H. L., U. S. Bureau of Entomology, Washington, D. C.
- Sasser, E. R., U. S. Bureau of Entomology, Washington, D. C.
- Satterthwait, A. F., Middletown, Pa.
- Seammell, H. B., Box 278, Grand Junction, Colo.
- Schoene, W. J., Agricultural Experiment Station, Geneva, N. Y.
- Scott, W. M., U. S. Bureau of Plant Industry, Washington, D. C.
- Severin, H. C., State Agricultural College, Brookings, S. D.
- Shafer, G. D., Agricultural Experiment Station, East Lansing, Mich.
- Shaw, N. E., State Department of Agriculture, Columbus, Ohio.
- Simanton, F. L., U. S. Bureau of Entomology, Washington, D. C.
- Smith, C. P., Agricultural Experiment Station, Logan, Utah.
- Smith, G. A., 6 Beacon St., Boston, Mass.
- Smith, H. E., U. S. Bureau of Entomology, Melrose Highlands, Mass.
- Smith, H. S., U. S. Bureau of Entomology, Salt Lake City, Utah.
- Smith, L. M., Carbondale, Ill.
- Smulyan, M. T., Archerst, Mass.
- Snyder, T. E., U. S. Bureau of Entomology, Washington, D. C.
- Somes, M. P., Iowa City, Iowa.
- Soule, A. M. G., Woolwich, Me.
- Southwick, E. B., Arsenal Building, Central Park, New York City.
- Spangler, A. J., Lawrence, Kansas.
- Spooner, Charles, Agricultural Experiment Station, St. Anthony Park, Minn.
- Stene, A. E., Agricultural Experiment Station, Kingston, R. I.
- Stiles, J. C., Blacksburg, Va.
- Stimson, James, Santa Clara, Cal.
- Summers, J. N., U. S. Bureau of Entomology, Melrose Highlands, Mass.
- Thaxter, Roland, 7 Scott St., Cambridge, Mass.
- Thompson, W. R., Cornell University, Ithaca, N. Y.
- Timberlake, P. H., U. S. Bureau of Entomology, Washington, D. C.
- Tothill, J. D., Central Experimental Farm, Ottawa, Canada.
- Tower, W. V., Agricultural Experiment Station, Mayaguez, P. R.
- Turner, W. F., Agricultural Experiment Station, Auburn, Ala.
- Urbanus, T. D., U. S. Bureau of Entomology, Salt Lake City, Utah.
- Vickery, R. A., U. S. Bureau of Entomology, Washington, D. C.
- Walton, W. R., U. S. Bureau of Entomology, Washington, D. C.
- Weed, C. M., State Normal School, Lowell, Mass.
- Weed, H. E., Railway Exchange Building, Chicago, Ill.
- Weldon, G. P., Grand Junction, Colo.
- Whitmarch, R. D., Agricultural Experiment Station, Wooster, Ohio.
- Wildermuth, V. L., U. S. Bureau of Entomology, Washington, D. C.
- Willmson, Warren, Agricultural Experiment Station, St. Anthony Park, Minn.
- Winslow, R. M., Department of Agriculture, Victoria, British Columbia, Canada.
- Wolcott, G. N., U. S. Bureau of Entomology, Dallas, Texas.
- Wood, H. P., U. S. Bureau of Entomology, Dallas, Texas.
- Wood, W. B., U. S. Bureau of Entomology, Washington, D. C.
- Worthley, L. H., U. S. Bureau of Entomology, 6 Beacon St., Boston, Mass.
- Yothers, M. A., Agricultural Experiment Station, Pullman, Wash.

Young, D. B., Geological Hall, Albany, N. Y.

Zimmer, J. F., U. S. Bureau of Entomology, Washington, D. C.

FOREIGN MEMBERS

Andersson, T. G., Department of Agriculture, Nairobi, British East Africa.

Ballou, H. A., Imperial Department of Agriculture, Barbados, West Indies.

Barlese, Dr. Antonio, Reale Stazione di Entomologia Agraria, Firenze, Italy.

Bordage, Edmond, Directeur de Musée, St. Denis, Reunion.

Carpenter, Dr. George H., Royal College of Science, Dublin, Ireland.

Chlodkosky, Prof. Dr. N., Militär-Medicinische Akademie, St. Petersburg, Russia.

Collinge, W. E., 55 Newhall Street, Birmingham, England.

Danyse, J., Laboratoire de Parasitologie, Bourse de Commerce, Paris, France.

DeBussy, L. P., Deli, Sumatra.

Enock, Fred, 42 Salisbury Road, Bexley, London, S.E., England.

Escherich, K., Forstschule, Tharandt, Germany.

French, Charles, Department of Agriculture, Melbourne, Australia.

Fruggatt, W. W., Department of Agriculture, Sydney, New South Wales.

Fuller, Claude, Department of Agriculture, Pietermaritzburg, Natal, South Africa.

Gillanders, A. T., Alnwick, Northumberland, England.

Goding, F. W., Newcastle, New South Wales.

Grasby, W. C., 6 West Australian Chambers, Perth, West Australia.

Green, E. E., Royal Botanic Gardens, Peradeniya, Ceylon.

Grosvenor, G. H., University Museum, Oxford, England.

Helm, Richard, 136 George Street, North Sydney, New South Wales.

Herrera, A. L., Calle de Betlemitas, No. 8, Mexico City, Mexico.

Hörvath, Dr. G., Musée Nationale Hongroise, Budapest, Hungary.

Jablonski, Josef, Entomological Station, Budapest, Hungary.

Kourduhoff, N., Opytnoe Pole, Poltava, Russia.

Kulagin, Nikolai M., Landwirtschaftliches Institut, Petrooskoje, Moscow, Russia.

Kuwana, S. I., Imperial Agricultural Experiment Station, Nishigahara, Tokio, Japan.

Lampa, Prof. Sven, Statens Entomologi-ka, Anstalt, Stockholm, Sweden.

Lea, A. M., Department of Agriculture, Hobart, Tasmania.

Leonardi, Gustavo, R. Scuola di Agricoltura, Portici, Italy.

Loomsbury, Charles P., Department of Agriculture, Pretoria, Transvaal, South Africa.

Mally, C. W., Department of Agriculture, Grahamstown, Cape Colony, South Africa.

Marchal, Dr. Paul, 16 Rue Claude Bernard, Paris, France.

Mokshetsky, Sigismund, Musée d'Histoire Naturelle, Simferopol, Crimea, Russia.

Mussen, Charles T., Hawkesbury Agricultural College, Richmond, New South Wales.

Nawa, Yashushi, Entomological Laboratory, Kyoumachii, Gifu, Japan.

Newstead, Robert, University School of Tropical Medicine, Liverpool, England.

Porchinski, Prof. A., Ministère de l'Agriculture, St. Peter-burg, Russia.

Porter, Carlos E., Casilla 2352, Santiago, Chile.

Pospielow, Dr. Walremar, Station Entomologique, Rue de Boulevard, No. 9, Kiew, Russia.

Reed, Charles S., Mendoza, Argentine Republic, South America.

Reuter, Dr. Enzo, Agrikultur-Economiska Försöksanstalten, Helsingfors, Finland.

Ritzema Bos, Dr. J., Agricultural College, Wageningen, Netherlands.

Rosenfeld, A. H., Estacion Experimental Industrial Agrícola, Tucuman, Argentina.

Sajo, Prof. Karl, Gödöllo-Véresgyház, Hungary.

- Schoyen, Prof. W. M., Zoological Museum, Christiania, Norway.
Severin, Prof. G., Curator Natural History Museum, Brussels, Belgium.
Shipley, Prof. Arthur E., Christ's College, Cambridge, England.
Silvestri, Dr. F., R. Scuola Superiore di Agricoltura, Portici, Italy.
Tepper, J. G. O., Norwood, South Australia.
Theobald, Frederick V., Wye Court, Wye, Kent, England.
Thompson, Rev. Edward H., Franklin, Tasmania.
Tryon, H., Queensland Museum, Brisbane, Queensland, Australia.
Urich, F. W., Victoria Institute, Port of Spain, Trinidad, West Indies.
Vernorel, V., Station Viticole, Villefranche, Rhone, France.

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No. 1

**Proceedings of the Twenty-fourth Annual Meeting
of the American Association of
Economic Entomologists**

The twenty-fourth annual meeting of the American Association of Economic Entomologists was held in the New National Museum, Washington, D. C., December 27-29, 1911.

The business proceedings follow in Part I, while the addresses, papers and discussions will be found in Part II of this report.

PART I, BUSINESS PROCEEDINGS

The meeting was called to order by President F. L. Washburn at 1.30 p. m., Wednesday, December 27, 1911. The attendance averaged one hundred and twenty members and visitors. The following members were present:

C. G. Babcock, College Park, Md.; E. A. Back, Blacksburg, Va.; E. D. Ball, Logan, Utah; Nathan Banks, Washington, D. C.; H. S. Barber, Washington, D. C.; G. M. Bentley, Knoxville, Tenn.; E. W. Berger, Gainesville, Fla.; F. E. Brooks, Washington, D. C.; A. F. Burgess, Melrose Highlands, Mass.; D. J. Caffrey, New Haven, Conn.; A. N. Caudell, Washington, D. C.; W. W. Chase, Atlanta, Ga.; F. H. Chittenden, Washington, D. C.; J. H. Comstock, Ithaca, N. Y.; A. F. Conradi, Clemson College, S. C.; R. A. Cooley, Bozeman, Mont.; E. N. Cory, College Park, Md.; J. C. Crawford, Washington, D. C.; C. R. Crosby, Ithaca, N. Y.; R. P. Currie, Washington, D. C.; R. A. Cushman, Washington, D. C.; H. G. Dyar, Washington, D. C.; E. B. Engle, Harrisburg, Pa.; E. P. Felt, Albany, N. Y.; H. T. Fernald, Amherst, Mass.; W. S. Fisher, Highspire, Pa.; S. A. Forbes, Urbana, Ill.; S. W. Foster, Washington, D. C.; A. B. Gahan, College Park, Md.; W. H. Goodwin, Wooster, Ohio; G. H. Grosvenor, Oxford, England; A. G. Hammar, Washington, D. C.; T. J. Headlee, Manhattan, Kansas; Otto Heidemann, Washington, D. C.; Glenn W. Herrick, Ithaca, N. Y.; P. H. Hertzog, Hightstown, N. J.; W. O. Hollister, Detroit, Mich.; W. A. Hooker, Washington, D. C.; A. D. Hopkins, Washington, D. C.; C. O. Houghton, Newark, Del.; J. S. Houser, Wooster, Ohio; L. O. Howard, Washington, D. C.; S. J. Hunter, Lawrence, Kansas; W. D. Hunter, Dallas, Texas; J. A. Hyslop, Washington, D. C.; J. F. Illingworth, Ithaca, N. Y.; A. H. Jennings, Dallas,

Texas; O. A. Jøhannsen, Orono, Me.; Fred Johnson, Washington, D. C.; Cornelia F. Kephart, Durham, N. H.; W. V. King, Washington, D. C.; Frederick Knab, Washington, D. C.; J. Kotinsky, Morristown, N. J.; A. D. MacGillivray, Urbana, Ill.; B. P. Mann, Washington, D. C.; C. L. Marlatt, Washington, D. C.; W. R. McConnell, State College, Pa.; E. A. McGregor, Dallas, Texas; L. S. McLaine, Amherst, Mass.; C. S. Menagh, Washington, D. C.; E. W. Mendenhall, Columbus, Ohio; Z. P. Metcalf, Raleigh, N. C.; F. B. Milliken, Manhattan, Kansas; A. C. Morgan, Clarksville, Tenn.; A. P. Morse, Wellesley, Mass.; J. A. Nelson, Washington, D. C.; Wilmon Newell, College Station, Texas; W. C. O'Kane, Durham, N. H.; Herbert Osborn, Columbus, Ohio; P. J. Parrott, Geneva, N. Y.; Edith M. Patch, Orono, Me.; L. M. Peairs, Morgantown, W. Va.; Theo. Perzande, Washington, D. C.; E. F. Phillips, Washington, D. C.; W. D. Pierce, Dallas, Texas; C. H. Popenoe, Washington, D. C.; W. J. Price, Jr., Blacksburg, Va.; A. L. Quaintance, Washington, D. C.; J. L. Randall, Pittsburg, Pa.; W. V. Reed, Atlanta, Ga.; W. S. Regan, Amherst, Mass.; D. M. Rogers, Boston, Mass.; W. E. Rumsey, Morgantown, W. Va.; G. A. Runner, Washington, D. C.; H. M. Russell, Washington, D. C.; J. G. Sanders, Madison, Wis.; E. D. Sanderson, Morgantown, W. Va.; H. L. Sanford, Washington, D. C.; E. R. Sasseer, Washington, D. C.; W. J. Schoene, Geneva, N. Y.; E. A. Schwarz, Washington, D. C.; W. M. Scott, Washington, D. C.; H. C. Severin, Brookings, S. D.; Franklin Sherman, Jr., Raleigh, N. C.; F. L. Simanton, Washington, D. C.; Henry Skinner, Philadelphia, Pa.; R. I. Smith, Mayaguez, Porto Rico; T. E. Snyder, Washington, D. C.; Charles Spooner, St. Anthony Park, Minn.; J. M. Stedman, Washington, D. C.; H. E. Summers, Ames, Iowa; H. A. Surface, Harrisburg, Pa.; M. H. Swenk, Lincoln, Neb.; T. B. Symons, College Park, Md.; R. A. Vickery, Washington, D. C.; H. L. Viereck, Washington, D. C.; B. H. Walden, New Haven, Conn.; W. R. Walton, Washington, D. C.; F. L. Washburn, St. Anthony Park, Minn.; J. L. Webb, Washington, D. C.; F. M. Webster, Washington, D. C.; R. S. Woglum, Washington, D. C.; G. N. Wolcott, Dallas, Texas; H. P. Wood, Dallas, Texas; W. B. Wood, Washington, D. C.; E. L. Worsham, Atlanta, Ga.; L. H. Worthley, Boston, Mass.; W. W. Yothers, Orlando, Fla., and J. F. Zimmer, Washington, D. C.

A large number of visitors attended each of the sessions but it was impossible to secure an accurate list.

* PRESIDENT F. L. WASHBURN: You will please come to order. We will now hear the report of the Secretary.

REPORT OF THE SECRETARY

At the time of the last annual meeting there were on the rolls of the Association 126 active, 138 associate and 48 foreign members. During the meeting 16 associate and 2 foreign members were elected and 8 associate members were advanced to active membership, and two associate members withdrew from the association. Since that time one active and two associate members have been dropped for non-payment of dues and one active and one foreign member have died. The present membership is now 132 active, 142* associate and 49 foreign, a net gain for the year of 11.

On November 5, 1910, Mr. E. C. Reed, Director of the Museum at Concepcion, Chile, who has for several years been a foreign member of this Association, died, but the news did not arrive in time for announcement at the last meeting. July 8, 1911,

*The announcement of the recent death of Mr. F. W. Terry, of Honolulu, Hawaii, was made at the meeting after this report was read. [See.]

Mr. D. W. Coquillett, one of the oldest active members, died at Atlantic City, N. J.

Arrangements have been made for sessions during the day and at times that would not interfere with the meetings of other closely related societies.

FINANCIAL STATEMENT

Balance in Treasury December 24, 1910.....	\$148.05
By amount received for dues, 1911.....	187.50
To stenographic report 1910 meeting.....	\$50.00
Stamps and stamped envelopes.....	18.12
Printing.....	6.00
Buttons, 1910.....	9.25
Buttons, 1911.....	10.10
Telegraph and express charges.....	2.20
Clerical work, secretary's office.....	20.00
Expenses of Committee on Legislation:	
Printing letterheads.....	4.00
Printing circulars.....	16.00
	<hr/>
	\$135.67
Balance in treasury, December 23, 1911.....	199.88
	<hr/>
	\$335.55 \$335.55

Respectfully submitted,

A. F. BURGESS,
Secretary.

PRESIDENT F. L. WASHBURN: You have heard the report of the Secretary. What is your pleasure?

J. L. WEBB: I move the adoption of the report.

SECRETARY A. F. BURGESS: I would suggest that the motion be modified so that the report can be referred to the Auditing Committee.

PRESIDENT F. L. WASHBURN: Those in favor say "Aye." Contrary, "No." It is referred. Next in order is the report of the Executive Committee which I will present.

REPORT OF THE EXECUTIVE COMMITTEE

The Executive Committee has had no meetings, because the members are widely separated, but we have conferred by mail and present for your approval, the amendment to the constitution as printed in the program.

With the approval of the committee I went to Columbus in November and interviewed the Committee on Station Organization and Policy there, and, as you may know, the Association of Agricultural Colleges and Experiment Stations passed very favorably upon our suggestion that the stations, as far as possible, pay the expenses of their men to the scientific meetings during the year, or, to at least, one meeting. Of course, this action is not binding on any Director or Board of Trustees, but it will help us, as it expresses the opinion of that organization. Since that meeting I have received letters from several Directors expressing sympathy with this movement.

I have a letter from Dr. True as to whether federal funds can be used to send

delegates to any meeting except that of the Association of Agricultural Colleges and Experiment stations. I had heard that he had ruled that government funds could be used for that meeting and no other. Dr. True says that this is not so and that he had never made a ruling that money from that source could not be used for other meetings. He says, "The same rules apply to travel outside the state as inside the state, provided the travel is on station business." I think the outlook is rather favorable for men having their expenses paid occasionally to these meetings.

Voted that the report be accepted.

PRESIDENT F. L. WASHBURN: We will now hear the report of the Committee on Nomenclature by Herbert Osborn.

REPORT OF THE COMMITTEE ON NOMENCLATURE

Your committee on nomenclature would beg to report that during the present year no extended lists have been offered for approval, and we deem it best not to make any suggestions as to the adoption of another extended list at this meeting. The adoption of the preceding list, has brought the number of accepted names up to nearly 300 and it appears to the committee that the adoption of this number furnishes a very good basis for testing the general acceptance and utilization of the society names. So far as we have been able to determine, the names authorized by the society have in general been accepted by working entomologists, but there have been a number of cases where these recommendations seem to have been overlooked or neglected, sometimes with disadvantage to the uniform usage in entomological papers. The following names have been suggested by Mr. R. L. Webster, and are proposed for adoption at this time:

Potato flea-beetle
Box elder aphid

Epitrix cucumeris Harris.
Chaitophorus negundinis Thomas.

These are recommended by the committee and we would ask a vote upon them at this time. The committee has been asked to propose some fixed rules concerning the hyphenization of the common names of insects, and while we realize the desirability of uniformity in this matter, it seems to the committee that it is hardly possible to enforce any common usage in this matter and that it will be as well to adhere for the present simply to the adoption of the names and that for the hyphenization, authors should follow one of the standard dictionaries as perhaps the most convenient plan. Since the usage in dictionaries differs, this, of course, will not insure uniformity and the committee is not prepared to specify any one dictionary which it might consider preferable as a standard.

HERBERT OSBORN,
A. L. QUAINANCE,
Committee.

PRESIDENT F. L. WASHBURN: You have heard the report—what is your pleasure?

On motion, the report was accepted.

The report of the Committee on Testing Proprietary Insecticides will be presented by Mr. Sanderson.

E. D. SANDERSON: Mr. President, I beg to say that it was my impression that this committee was not continued, but correspondence

with the Secretary developed that it had been. We have had no meetings, and I would recommend that the committee be discharged. We have no further use for the committee, in view of the fact that the matter is now handled by the Bureau of Entomology and various other bureaus of the United States Department of Agriculture, co-operating. It seems to me that we might have a report upon the various proprietary insecticides in an informal way that might be serviceable to us and keep us posted as to the status of the various insecticides that are being pushed on the market. Of course, that information could not be given out for publication except through official channels.

PRESIDENT F. L. WASHBURN: You have heard Mr. Sanderson's remarks. Any opinion to be expressed on that report?

A. L. QUAINANCE: Mr. President, I hardly think the committee should be discharged, at least for the reasons stated by Mr. Sanderson. I do not see how the Bureau of Entomology, acting under the Insecticide Act, could furnish the information that this committee attempted to obtain.

PRESIDENT F. L. WASHBURN: There seems to be some objection to the committee being discharged. Any other expression of opinion on that point? The chair rules the committee be continued.

Report of the Committee on Affiliation with Agricultural Organizations. Mr. Burgess will report for the committee.

SECRETARY A. F. BURGESS: Mr. Chairman, the Committee on Affiliation with Agricultural Organizations consists of Professor Bruner, Chairman, Doctor Hopkins and myself. I find that Professor Bruner will not be present and has not sent a report. Dr. Hopkins has handed me a letter from Dr. Allen, of the Office of Experiment Stations, who is Secretary of the Society for the Promotion of Agricultural Science, which has been largely interested in the proposed affiliation, and, inasmuch as the committee is not ready to make a report, it seems to me that the best thing that can be done will be to have the committee discharged and this letter of Dr. Allen's, with a proposal in regard to affiliation, turned over to a new committee, which can report at the closing session of this meeting. The letter from Dr. Allen states that at the Columbus meeting of the Association of Agricultural Colleges and Experiment Stations, five societies, the American Society of Agronomy, the American Society of Animal Nutrition, the American Farm Management Association, the Society for the Promotion of Agricultural Science and the Official Agricultural Chemists, expressed their approval for a plan of affiliation and were willing to federate under the terms which were proposed at the last meeting of this Association, and which were printed in the February number of the JOURNAL. I would suggest that the present committee be discharged,

inasmuch as Professor Bruner is not here, and that the matter be turned over to a new committee, who can take this letter regarding the proposed plan and report at the last session of this meeting.

It was moved and carried, that such a committee be appointed by the Chair.

PRESIDENT F. L. WASHBURN: We will now listen to the report of the Committee on Legislation by Mr. Symons.

T. B. SYMONS: Mr. President and Members of the Association, I would like to say that I have not been able to see Professor Worsham, though I submitted a copy of my report to him, but have not received a reply. The other member of the committee, Dr. Smith, to whom I submitted part of the report, replied and agreed to the same, as follows:

REPORT OF COMMITTEE ON LEGISLATION

Mr. President and Members of the Association:

Your committee submits a report of progress together with a brief history of the legislation governing the importation of foreign nursery stock and other plants during the past year.

The activities of this committee began with the so-called Simmons bill of the last session of Congress. After elaborate hearings, in 1910, this bill was favorably reported from the committee on agriculture to the House (January, 1911). Owing to the conditions of this concluding session it was impossible to bring it up in its regular course and secure for it a full discussion. Under suspension of the rules it came up for a 20-minute consideration on nearly the closing day of the session, and the measure failed to secure the necessary two-thirds vote to pass it under suspension of the rules.

As a result of conferences with the legal and other officers of the Department of Agriculture and with several important leaders in Congress, an entirely new bill was drawn up by the Department of Agriculture and submitted to members of this committee and a number of State inspectors, entomologists and pathologists, and was approved by them. This new measure was introduced in both houses of Congress at the special session called by the President, and is the bill now before Congress. There is every reason to hope that it will become a law. It will be subject to amendment, and certain minor changes have already been suggested in the measure by the Department of Agriculture.

In the early spring, when it appeared that the bill would be brought up in the House, your committee had printed a statement setting forth the necessity for such legislation, for distribution to the agricultural press of the country, and also procured one thousand copies of a statement of facts regarding the history of such legislation, printed in the JOURNAL OF ECONOMIC ENTOMOLOGY, and one thousand copies of the favorable report of the Agricultural Committee. It was intended to send these articles together with the committee's statement to all organizations and parties whose influence would aid in securing the passage of the bill. On account of the substitution of an entirely new bill before the present Congress, this matter was not sent out.

Your committee has now sent out in place of this matter another statement together with a circular issued from the Office of the Secretary of Agriculture, giving

copy of the bill and explanation of its scope to all parties whom we thought would be interested in securing the legislation.

It is the belief of your committee that the present bill offers the least features which could possibly interfere with the proper conduct of any importing business, consistent with the desire for any protection at all. Your committee disclaims any antagonism on the part of its members to any legitimate interest and in fact has done its utmost during the past five years to bring about an amicable understanding among all parties concerning this legislation.

The present bill has already been endorsed by many national and state organizations, and it is hoped to have as many individuals write their congressmen regarding the bill as possible. We believe that the entomologists and horticultural inspectors of the country should unite in a vigorous attempt to secure this legislation, irrespective of what petty affiliations may demand. It is a time when our influence and prestige are at stake.

The time has come when each of us should exert every effort to arouse the public conscience in our respective states to the necessity of such legislation. Your committee recommends that a larger committee be appointed to take care of this important matter, so that the burden of the work can be distributed and a larger representation appear at any hearings that may be announced.

Your committee is indebted to the Bureau of Entomology and especially to Doctor C. L. Marlatt, who has active charge of the legislation for the Bureau, for much assistance in an endeavor to aid in promoting the measure to the present state.

Respectfully submitted,

THOMAS B. SYMONS, *College Park, Md.*

J. B. SMITH, *New Brunswick, N. J.,*

E. L. WILSHAM, *Atlanta, Ga.,*

*Committee on National Legislation of the American
Association of Economic Entomologists.*

T. B. SYMONS: I would like to say, Mr. President, that Mr. Marlatt is present and I feel sure that he would be pleased to give the Association the advantage of his views on the present status of affairs.

MR. MARLATT: The history of the effort to secure a national quarantine and inspection law covering imported plants is familiar to most of you. A brief statement may, however, be made of the efforts in this direction of the last year,— efforts which again were unsuccessful, largely due to the opposition of the legislative committee of the national nurserymen's association.

The bill submitted to the last Congress was, as you know, a compromise measure, in which the wishes of nurserymen were acceded to wherever possible. At their instance, examination was provided for at the point of destination on the premises of the importer instead of at the port of entry, thus meeting the main objection which had been raised to the bill in its earlier stage. A number of other important changes were made at their instance, all, in fact, of moment except the elimination of the power of establishing when necessary foreign quarantine against particular plants to keep out diseases or insect

pests which could not otherwise be excluded. This provision has merely to be stated to indicate its importance. It is aimed especially at such dangers as the potato wart disease and the white pine blister rust, which pathological experts assure us no inspection or disinfection would reach. It would seldom apply to the regular import trade in seedling nursery stock.

As thus amended, the bill was introduced during the concluding session of the last Congress and was favorably reported from the agricultural committee of the House, but owing to legislative conditions of this session of Congress, largely limiting the activities of this body to special subjects, it was not possible to have the plant bill brought up in the regular course and given adequate discussion. As a result of the continuous and strong effort near the close of the session, it was brought up ahead of its regular turn on the unanimous consent calendar, which, however, practically allowed no opportunity for debate or proper presentation of the urgency of the measure. Much of the few minutes available was occupied by the chief opponent of the measure, representing the views of the importing nurserymen, in a violent denunciation of the measure and the men who were promoting it, and when it came to a vote it failed to secure the necessary two-thirds support to pass it under the suspension of the rules. This result was evidently in no sense a test of the feeling of the House, and undoubtedly if the bill had been fully understood it would have received almost unanimous support.

At the special session of the present Congress brought together at the call of the president for a particular purpose, opportunity was not afforded to push this legislation. Nevertheless, the subject was again taken up with congressmen interested in the House and with the chairman of the senate committee on agriculture, who was also interested in pushing the bill; and at the suggestion of the latter, with Mr. Mann, the minority leader on the floor of the House. The result of various conferences led to the drawing up of an entirely new bill by the solicitor of the Department of Agriculture, in conference with the different bureaus interested and with several state officials who could be brought together easily and particularly from states perhaps most affected by import nursery trade.

During the extra session this bill was introduced in both the Senate and the House (S. 2870 and H. R. 12311). The chief point of divergence from the bill of last year is that inspection of imported nursery stock is to be left to the different states instead of being undertaken by the federal government. This change was made because, on investigation of the subject from a legal standpoint, it appeared that the federal authority did not extend to imported goods after they had

once passed out of the hands of the common carrier and were on the premises and in the possession of the owner at point of destination. In other words, the federal government's authority only extended to the goods before they had been freed from customs or while in interstate transit. While it would perhaps be possible to accomplish the result in other ways, inasmuch as most of the states already had machinery for inspection, and in some of these the inspection was fully as efficient as it would be under federal control, it was deemed a better arrangement to leave the inspection entirely to the state authorities, the federal government standing ready to render such assistance as might be necessary or to act in an advisory capacity as at present. The bill, however, is strengthened by the provision for a complete system of notification, both by requiring a permit previous to importation and by subsequent advices to be furnished by the customs officers, the broker, or first receiver of the stock, and the common carrier transporting it. This will enable the Department of Agriculture to secure promptly or in advance full information concerning every bit of imported living plant material, and make it possible to transmit complete information to the officials in the different states. Any special foreign dangers which can not probably be controlled by inspection are still covered by the section providing for foreign quarantine. The features of domestic quarantine remain as before, providing a federal means of preventing the spread and stamping out if possible of points of infestation by new pests or diseases.

This bill is now before both houses of Congress, and in this long session there should be ample time for its full discussion, and presentation on its merits. The outlook for favorable action is therefore good.

T. B. SYMONS: Mr. President, I think we should have a very frank discussion of this matter, because, if there is one set of people that should agree on any matter, we entomologists should agree on the bill we want to get behind, and if you have objections to the bill it seems to me that now is the time to present them, so that the Association can get behind a bill that is agreeable, if this one is not desirable.

SECRETARY A. F. BURGESS: Mr. President, it has occurred to me that, as this inspection matter is one with which the Horticultural Inspectors will have more to deal with than the entomologists, and, as the Horticultural Inspectors will hold a meeting Thursday evening and will probably discuss the matter, that it might be well for us to let our formal action on it go over until Friday morning, after the Horticultural Inspectors have had a chance to discuss the matter, and probably we would agree with their findings, and they could, perhaps, discuss it better and save time for us.

It was so moved and carried.

E. D. SANDERSON: I move it be made a special order for Friday morning. Carried.

PRESIDENT F. L. WASHBURN: Report of the Committee on Entomological Investigations, by E. D. Sanderson.

REPORT OF THE COMMITTEE ON ENTOMOLOGICAL INVESTIGATIONS

To the American Association of Economic Entomologists:

Your committee on entomological investigations begs leave to report, as follows:

A preliminary report of the committee giving the entomological projects now being investigated by members of the association has been published in the December number of the *JOURNAL OF ECONOMIC ENTOMOLOGY*. Since that time several workers have furnished additional reports and their list of projects is appended herewith. Your committee sent out letters of inquiry to the heads of the departments of 48 institutions, 45 reports were received. Of these, 34 gave a statement of their projects; 6 replied, but either were carrying on no investigations or were unable to report; and 5 declined to report.

The 34 parties reporting had a total of 154 projects. Of these, 77 were investigations of the life history and means of control of certain insects; 31 involved merely means of control of insects; 10 were monographic studies; 10 were studies of groups of insects affecting certain crops; 9 were investigations of insecticides; 5 were studies of various phases of environment as affecting insect life; 4 were studies of parasites and parasitism; 3 were general biological studies; 2 investigations considered the relation of certain insects to disease; and 2 projects used insect material in the study of the principles of heredity. It is thus seen that half of the projects relate to individual insect pests, while about 15 per cent are broad investigations of fundamental problems of insect biology or control.

Of the 154 projects, report was made of 110 in regard to the funds from which they were supported. Of these 110 projects, 33 were supported by the Adams Fund, although at least half as many more supported by state funds were of a similar nature. In general, the experiment station entomologists have but one or two Adams Fund projects, in a few cases their entire time being devoted to this work, but one station reports four Adams Fund projects and another five. It seems to your committee that it is doubtful whether over two, or at most three, investigations, such as are contemplated under the Adams Act, can be properly carried on at a station under that fund, unless there be a large force of entomological workers.

Interest seems to have waned in the San José scale, as only three states reported upon it as against four of last year. Seven states are investigating the Woolly Aphis, namely: Arkansas, Illinois, Kansas, Georgia, Maryland, Ohio and Virginia. Seven states are investigating the Peach Tree Borer, namely: Tennessee, Arkansas, Texas, Mississippi, Missouri, Maryland and Canada, three of these investigations being under the Adams Fund. Seven workers in six states are investigating the Colling Moth, namely: Arizona, Colorado, Kansas, Utah, New York and Georgia.

The number of investigations of the Woolly Aphis and the Peach Tree Borer would seem to indicate a widespread interest in these two insects. Your committee is not prepared to say that it is not desirable that this work should be duplicated in all of these states. It would seem evident, however, that where several adjacent states are investigating the same insect that their conclusions must necessarily, if correct, be very similar and it would seem highly desirable that there be some co-operation, in outlining this work, in method of reporting it, and by way of conference concerning its progress. The committee would suggest that where it is found that so large a

number of states are interested in a subject, that one or two of these topics be made the subject of a conference or discussion at our annual meeting.

Your committee endeavored to secure some data as to the relation of investigation work to teaching but was unable to secure sufficient information to warrant any conclusion. The reports do indicate, however, that in three states the amount of demonstration work being carried on has seriously handicapped research work; that this is not more generally true indicates the differentiation of extension and research work, which should be carried further wherever necessary.

Your committee finds that the large majority of our workers are now clearly outlining projects which they are investigating. In some departments the work does not seem to be organized under any system of projects; the investigations are of a broad nature and the resulting conclusions are secured from accumulative evidence. We are impressed with the fact that those departments which organize their work under definite projects, and confine their investigations to specific lines of work seem to be securing more definite results for the energy expended.

It is evident from the previous summary of the reports that about 90 per cent of our workers are more or less in sympathy with the idea which the work of this committee represents, namely, of acquainting each other with the work under way.

From the reports submitted it is evident that there is now but little practical co-operation between departments or institutions, in the prosecution of entomological research. Your committee believes that wherever different departments of the same institutions or workers in different institutions are working on similar or the same projects that it should be their first duty to try and co-operate with each other in every practicable manner.

But few of those reporting outline projects which they expect to undertake during the next calendar year. This may very possibly be due to the fact that the matter had not yet been decided upon. Your committee can appreciate that there are very good arguments both for and against the publication of proposed projects. They would appreciate instructions from the Association as to its wish in this matter, so that they may act accordingly in sending out the questions prior to another report. Only five persons of those replying declined to furnish the information. Some of these refusals came from some of our most effective and respected workers. Their communications to your committee should be regarded as confidential. Two of them give no definite reason for their refusal to report, except general objections to publicity. The other three have discussed the matter somewhat and their objections are the same, namely: that by making a public statement of the investigations they are carrying on that other workers who lack ideas of their own, will take up similar lines of work, and either forestall them or share the honors with them. In other words, as one of the correspondents expresses it, "Original thinkers must bear the burden of intellectual parasites." One correspondent cites an instance in which another worker took his idea from him, and with more time and money to prosecute the research, has been able to proceed further without giving the originator any recognition.

These objections furnish food for thought, and your committee does not wish to discuss them in detail. Were we working upon private foundations, as are some of our universities, these objections might be valid, though we are inclined to question their altruism even then, but it must be remembered that we are working under appropriations made by the national or state governments for the welfare of the general public. Because one individual sees a subject which needs investigation, and which he believes would be of value is no reason why another should not undertake it, if the interest of the public seems to demand it. Certainly we should all have

due regard to professional courtesy, and should give proper credit to the source of ideas, but when this is done the obligation is paid, if we feel that the investigation for the interest of the public whom we are serving. If a subject is worthy of investigation there should be no reason but expediency why one or several workers should not take up the matter, whether it is or is not being prosecuted by the one who announced it.

We should have such an understanding between ourselves as would make it decidedly uncomfortable for those who are guilty of this sort of "parasitism" and who not give proper consideration to those to whom they are indebted.

Your committee feels that the general purposes for which it has been created met with the approval of the membership of this association. We are also encouraged to believe that the general idea of furnishing each other with a statement of the line of work being carried on is in the line of progress from the action of the director of the Agricultural Experiment Stations at their recent meeting at Columbus. A some discussion by several of the leading experiment station directors, a motion unanimously passed by the experiment station section of the American Association Agricultural Colleges and Experiment Stations, directing the committee on Stat Organization and Policy to consider and report at the next meeting how a statement of the projects being carried on by the various experiment stations may be published for their use, either by the office of experiment stations or otherwise. Those who advocate this movement support it with much the same line of reasoning which been advanced by this committee, and took occasion to compliment the American Association of Economic Entomologists upon their enterprise in this matter.

Respectfully submitted,

E. D. SANDERSON,

T. J. HEADLEE,

FRANKLIN SHERMAN, JR.,

Committee

(SUPPLEMENTAL REPORT)

Crustacea

1. (A) Crayfish of Mississippi; a systematic and biologic study.
R. W. Harned and R. W. Loddell, Agricultural College, Miss.

Acarina

2. Tick investigations in Montana with particular reference to *Dermacentor venustus* (Coöperation with Bureau of Entomology and U. S. Biological Survey.)
R. A. Cooley, Mont. Agr. Exp. Sta., Bozeman, Mont.

Mallophaga

3. Poultry parasites. A study of the Mallophagan parasites of domestic fow with methods of control.
G. W. Herrick, Cornell Univ. Agr. Exp. Sta., Ithaca, N. Y.

Coleoptera

4. Elm leaf-beetle; means of control.
G. W. Herrick, Cornell Univ. Agr. Exp. Sta., Ithaca, N. Y.
5. Alfalfa weevil. (Coöperation with Bureau of Entomology.)
E. G. Titus, Utah Agr. Exp. Station, Logan, Utah.

6. (A) Bean Leaf-beetle; life history, means of control.
R. W. Harned, Agricultural College, Miss.
7. (H) Boll weevil in Mississippi; a study of its habits, factors in natural control, read, and means of control.
R. W. Harned, Agricultural College, Miss.
8. (H & S) Hickory Twig-girdler (*Oncideres cingulatus*); life history and control.
L. Haseman, Mo. Agr. Exp. Sta., Columbia, Mo.
9. Rose-chaffer; means of control.
E. A. Back, Va. Agr. Exp. Sta., Blacksburg, Va.
10. (H & S) Striped cucumber beetle; control.
L. Haseman, Mo. Agr. Exp. Sta., Columbia, Mo.
11. (A) Sugar beet silphid (*Silpha bilabiosa*); life history and control.
R. A. Cooley, Montana Agr. Exp. Sta., Bozeman, Mont.

Hemiptera

12. (H & S) Tarnished plant bug; life history, means of control.
L. Haseman, Mo. Agr. Exp. Sta., Columbia, Mo.
13. (H & S) Apple leaf-hopper; means of control.
L. Haseman, Mo. Agr. Exp. Sta., Columbia, Mo.
14. Woolly Aphis.
E. A. Back, Va. Agr. Exp. Sta., Blacksburg, Va.
15. (A) Sugar beet root-louse (*Pemphigus betae*); life history, and means of control.
R. A. Cooley, Mont. Agr. Exp. Sta., Bozeman, Mont.
16. (H & S) San José scale; general survey of status in Missouri and control work.
L. Haseman, Mo. Agr. Exp. Sta., Columbia, Mo.
17. (A) Oyster shell scale; study of control by insecticides.
R. A. Cooley, Mont. Agr. Exp. Sta., Bozeman, Mont.
18. (H & A) Scale Insects of Mississippi; survey of species; life history studies and means of control.
R. W. Harned and S. F. Blumenfeld, Agricultural College, Miss.

Lepidoptera

19. Fruit-tree leaf-roller; life history and control on apple.
G. W. Herrick, Cornell Univ. Agr. Exp. Sta., Ithaca, N. Y.
20. Larch case-bearer; life history and means of control.
G. W. Herrick, Cornell Univ. Agr. Exp. Sta., Ithaca, N. Y.
21. Codling moth; life history and control in Western N. Y.
R. W. Braucher, Cornell Univ. Agr. Exp. Sta., Ithaca, N. Y.
22. Codling moth spraying experiments.
E. G. Titus, Utah Agr. Exp. Sta., Logan, Utah.
23. (A) Bud infesting insects of the apple.
A. L. Melander, Wash. Agr. Exp. Sta., Pullman, Wash.
24. (H & S) Peach tree borer; means of control. (Coöperation with department of horticulture.)
L. Haseman, Mo. Agr. Exp. Sta., Columbia, Mo.
25. (A) Peach tree borer; life history, means of control.
S. F. Blumenfeld, Agricultural College, Miss.
26. (A) Cutworms of Montana; life history and means of control.
R. A. Cooley, Mont. Agr. Exp. Sta., Bozeman, Mont.

27. (H & S)* Evergreen bagworm (*Thyridopteryx ephemeraformis*); life history and means of control.

L. Haseman, Mo. Agr. Exp. Sta., Columbia, Mo.

28. (H & S) Spotted tentiform leaf-miner (*Ornix prunivorella* Cham.); life history, distribution and means of control.

L. Haseman, Mo. Agr. Exp. Sta., Columbia, Mo.

Diptera

29. Apple maggot; biology and methods of control.

J. W. Illingworth, Cornell Univ. Agr. Exp. Sta., Ithaca, N. Y.

Thysanoptera

30. (S) Onion thrips and other truck crop insects; to determine best means of control. (Coöperation with department of plant pathology.)

J. G. Sanders, Wis. Agr. Exp. Sta., Madison, Wis.

General Subject

31. Sugar beet insects.

E. G. Titus, Utah Agr. Exp. Sta., Logan, Utah.

32. Cranberry insect investigations. (Coöperation with department of plant pathology of same station and U. S. Bureau of Entomology.)

J. G. Sanders and assistant, Wis. Agr. Exp. Sta., Madison, Wis.

33. (A) Pecan insects; a systematic and biologic study of pecan insects.

R. W. Harned, Agricultural College, Miss.

Incidental to Insect Control

34. Arsenical poisoning of fruit trees. (With cooperation of the director and the associate chemist.)

E. G. Titus, Utah Agr. Exp. Sta., Logan, Utah.

35. Spraying experiments in apple orchards. (Coöperation with departments of Botany and Demonstration Farms.)

A. L. Melander, Wash. Agr. Exp. Sta., Pullman, Wash.

36. Fumigation studies.

C. W. Woodworth, Cal. Agr. Exp. Sta., Berkeley, Cal.

PRESIDENT F. L. WASHBURN: Any remarks on this very thorough report of the committee? The chair is under the impression, with all due respect to the committee, that it is hardly within its province to criticise a station's work or its business management.

On motion the report was duly accepted.

Report of the Committee on Employment Bureau for Entomologists
The speaker is chairman of that committee, which consists of two other members, Messrs. Burgess and Osborn. The report is as follows

REPORT OF THE COMMITTEE UPON THE FEASIBILITY OF HAVING AN EMPLOYMENT BUREAU FOR ENTOMOLOGISTS IN CHARGE OF THIS ASSOCIATION.

The committee believes that some such agency as suggested at our last meeting would be a desirable thing, and would prove useful for members of the Association

as well as adding to the usefulness of the organization as a whole. 'The expense to members seeking positions would be far less than that at present paid to teachers' agencies. It has been suggested that some one duly appointed should have a book of registration in which any entomologist desiring employment or change of position should be entered, with his qualifications. From this register the information would be given to entomologists desiring to fill positions. A small fee would probably have to be charged to cover the cost of correspondence and clerical work. Whoever had charge of this work would necessarily be expected to regard communications from applicants as confidential.

Respectfully submitted,

F. L. WASHBURN,

HERBERT OSBORN,

A. F. BURGESS,

Committee.

PRESIDENT F. L. WASHBURN: Any comments upon the report?

WILSON NEWELL: Mr. President, I move that the report be adopted and that the President and Secretary of the Association be authorized to put its recommendations into effect. Carried.

PRESIDENT F. L. WASHBURN: I will now appoint the committees for the meeting.

Committee on Resolutions: P. J. Parrott, S. J. Hunter and W. C. O'Kane.

Committee on Memorial Resolutions: H. T. Fernald, T. B. Symons and T. J. Headlee.

Committee on Auditing: J. G. Sanders and A. L. Quaintance.

Committee on Affiliation with Agricultural Organizations: F. M. Webster, S. A. Forbes and W. C. O'Kane.

Committee on Nominations: E. P. Felt, E. L. Worsham and W. D. Hunter.

I will add one member to the Committee on Affiliation of the Horticultural Inspectors with this Association, namely, Mr. Burgess, and to the Membership Committee, Mr. Ball.

I have been asked to announce that the annual meeting of the Journal of Economic Entomology Publishing Company will be held at the New Ebbitt Hotel at 4.45 this afternoon. The annual address before the Entomological Society of America will be given by Prof. J. H. Comstock at the Cosmos Club at eight o'clock tonight. On Thursday night the annual meeting of the American Association of Horticultural Inspectors will be held at the New Willard Hotel and on Friday night the members of the Association will be the guests of the Entomological Society of Washington at a smoker at the Sengerbund Hall.

The next business will be action by the Association on the following amendment to the constitution as proposed by the Executive Committee: "That article 3 of the By-laws be amended so that sec-

tion 1 will read as follows: 'The annual dues of active members shall be \$2.00 and of associate members, \$1.50, which shall be payable in advance, the same to include a subscription to the JOURNAL OF ECONOMIC ENTOMOLOGY. No dues shall be payable from foreign members but they shall be charged \$1.50 for the JOURNAL if they desire it.' "

PRESIDENT F. L. WASHBURN: It is moved and seconded that the amendment be adopted as read. Any remarks.

H. E. SUMMERS: Mr. President, I believe for two years past I have made one remark that I wish to make again. It is that we are not showing honor to our honorary members, to our honorary foreign members, by charging dues for our proceedings. The foreign membership has been regarded as an honorary membership that has not been bestowed indiscriminately. We have, I know, had some applications from foreign entomologists to be admitted to that list, and they were refused on the ground that it was regarded distinctly as an honor, and it seems to me that not to give them the proceedings freely is a rather petty matter. Personally, I would rather join with a few members and pay for the proceedings than see this action by a national association, which it seems to me will make us look rather small in the minds of some of the foreign entomologists. I refer here, of course, only to a part of this total amendment, and, to bring this matter to a focus, I move to amend the motion by striking out the words "but they shall be charged \$1.50 for the JOURNAL if they desire it."

E. D. SANDERSON: Mr. President, by striking out this matter, it will not change the status of the case. These men have been charged for the JOURNAL for the past four years. They are regular subscribers to it, practically all of them. If that is struck out, then this Association will have to pay for it, if I am not mistaken. I do not believe that the Publishing Company should furnish the JOURNAL free. It is not a good business proposition. If the Association were running the JOURNAL, it would be a different matter, and if we want to send these complimentary copies, this Association ought to pay for them. My own opinion would be that it would be all right to strike that phrase out, but, unless there is some other action by this Association, it would not change the case, as far as I can see.

PRESIDENT F. L. WASHBURN: The Secretary reminds me that it would make a difference of \$75.00 in the annual income from the JOURNAL if that were taken off.

E. P. FELT: Mr. President, there is another phase to be considered, and that is that the JOURNAL in which our proceedings are published contains a great deal more than the proceedings of this Association, and I see no reason why the Association of Economic Entomologists should be under obligations to furnish this additional matter at least

to our foreign members. I doubt very much if any one of them would resent it in the slightest if we adopt the amendment as originally proposed.

H. E. SUMMERS: May I ask why this Association should put into its constitution a statement that they should be charged for the JOURNAL? If the decision as to whether these members should be charged for the JOURNAL depends on the Journal Publishing Company, then this Association has nothing to do with it and this phrase would seem out of place in our constitution.

SECRETARY A. F. BURGESS: The Journal Publishing Company has a contract with the Association that it will furnish to the active and associate members of the Association the JOURNAL for \$1.00 a year, the regular subscription price being \$2.00, and the Journal Publishing Company has furnished to foreign members of this Association the JOURNAL for \$1.50 a year, on account of extra cost of mailing, and, as long as the dues were to be raised to the members of the Association, active and associate, \$1.00 to cover subscription to the JOURNAL, the same arrangement was applied to foreign members. The foreign members pay for their JOURNAL; the active and associate members pay for their JOURNAL.

H. E. SUMMERS: Mr. President, was that a contract with the Journal Publishing Company that they furnish the JOURNAL to the active and associate members of the Association, or is that incorporated in the constitution?

SECRETARY A. F. BURGESS: It has nothing to do with the Constitution of the Association of Economic Entomologists. It is a contract.

E. P. FELT: Mr. Chairman, I would move that the last sentence be amended, to read, beginning after "foreign members," "but such membership shall not entitle the holders thereof to receive the JOURNAL OF ECONOMIC ENTOMOLOGY gratis." Carried.

SECRETARY A. F. BURGESS: Mr. President, I have a letter here from the General Secretary of the Society for the Advancement of Education in the South. It was sent the second of December and as it was impossible to act upon it, I will read the letter now, since I wrote the Secretary I would bring it up at this meeting.

CHATTANOOGA, TENN., December 2, 1911.

MR. A. F. BURGESS, Sec.,
Bureau of Entomology,
WASHINGTON, D. C.

My dear Sir,

The Society for the Advancement of Education in the South extends a very cordial invitation to your organization for such of your members as live in the 16 Southern States to meet with our organization, arrange a program for themselves, and thereby

increase the interest in your organization among such of your Southern members as usually do not attend your own meeting. Our organization meets on December 27, 28, and 29, 1911. Only at night does our Society meet in a body as all meetings in the daytime are Departmental meetings. Railroads have granted a special rate of one and a half fare for a round trip east of the Mississippi and south of the Ohio rivers. Every possible courtesy will be extended to your organization by way of making arrangements for the railroad and hotel accommodations, meeting halls, all of which is in the hands of the General Secretary of this organization.

Should the time be too short to arrange a program, and should the matter not yet have been considered by you, we hope you will bring it to the notice of the officials at your meeting so that action can be taken in this line when we will again extend the invitation to you in course of a few months to meet with us in another state in the South. You will note that a large number of your members living in the South never attend your meetings in the North.

We should very much like to hear from you at your earliest convenience regarding this matter. If you will give a meeting, we will be glad to announce it in our program which will go to the press December 12th.

Most respectfully,

H. E. BIERLY,
General Secretary.

SECRETARY A. F. BURGESS: This Society is one of which I know very little, and it seemed to me it would be very desirable for the Association at this time to appoint a committee of three members from the Southern States, and turn the matter over to them, and let them report at the last session as to whether they consider further action advisable. On motion, so referred.

PRESIDENT F. L. WASHBURN: I will appoint on that committee Wilmon Newell, E. L. Worsham and W. E. Rumsey.

WILMON NEWELL: Mr. President, there is one resolution that I would like to offer before we adjourn. One of the oldest members of this Association and one who has been very faithful in attendance has been ill for several weeks at his home, and I think it is only proper that this Association should send him a telegram of condolence. I refer to Dr. John B. Smith, State Entomologist of New Jersey, and I move that the President and Secretary send such a telegram, assuring him of our sympathy. Carried.

At the morning session, Thursday, December 28, the President announced the recent death of Mr. F. W. Terry, Assistant Entomologist to the Hawaiian Sugar Planters' Experiment Station, at Honolulu, Hawaii, who was an associate member of the Association and referred the matter to the Committee on Memorial Resolutions for action.

He also called on Dr. E. P. Felt to make a statement concerning the JOURNAL OF ECONOMIC ENTOMOLOGY.

E. P. FELT: Mr. Chairman, with the permission of the Association, I would like to bring up a matter, in order that you may act upon it

more intelligently later, in case you care to do so. All the members of the Association know that for the past four years we have had the JOURNAL OF ECONOMIC ENTOMOLOGY, which has been the official organ of this Association. The Journal Publishing Company has been responsible for the venture, and started it with the idea of demonstrating the feasibility of conducting such a publication. At a meeting last night, it was shown that our assets were in at least fair condition and that we have some property of considerable value in the way of earlier numbers. It was decided, by the stockholders, that it was advisable to put the JOURNAL upon a more thorough business basis. We are simply bound together now by Articles of Organization, and that more thorough business basis will take one of two forms,- either incorporation, with the idea of continuing the Journal Publishing Company as an independent organization, or else it will be taken in charge by the Association. We didn't go into this undertaking for the purpose of making money, and my idea in bringing it up at this time is this: If the Association of Economic Entomologists wants to take over the JOURNAL OF ECONOMIC ENTOMOLOGY I think I am well within my rights in saying that the stockholders will waive practically all their claims, all their investments of both time and money, practically, though perhaps not absolutely,- and then, with the Association back of it, it ought to be even stronger than it has been, and is at the present time. My suggestion is that a committee of three representative men, preferably not stockholders in the Journal Company, be appointed, with power to confer with a similar committee representing the Journal of Economic Entomology Publishing Company, and see if we can arrange a basis which will be mutually satisfactory, and have a report from this committee tomorrow morning. Just to facilitate this matter, I would like to move, Mr. President, that a committee of three, preferably not stockholders in the Journal Company, be named from the floor, to take this matter up with the representatives of the Journal Company and report tomorrow morning.

The motion prevailed and the following members, not stockholders in the Publishing Company were nominated from the floor and elected: A. L. Quaintance, W. C. O'Kane and A. D. Hopkins.

At the afternoon session Thursday, December 28, several matters of business were transacted.

PRESIDENT F. L. WASHBURN: There is a matter of business to come up at this point. The committee nominated by your body to consider the advisability of the Association taking over the JOURNAL feels obliged to report at this time in order that they may consult a lawyer before tomorrow morning regarding the legal aspects of the

case, and, therefore, I will call upon Mr. O'Kane to read the report of the committee's deliberations.

W. C. O'KANE: The reason why it is necessary that this committee should make this report now will be evident when you learn the recommendations of the committee. Your committee makes the following recommendations:

REPORT OF THE COMMITTEE ON THE POLICY OF TAKING OVER THE PUBLICATION OF THE JOURNAL OF ECONOMIC ENTOMOLOGY

Your committee makes the following recommendations:

1. That the liberal proposition of the Journal of Economic Entomology Publishing Company to transfer to the American Association of Economic Entomologists its publication and net assets be accepted.

2. That the publication of the JOURNAL OF ECONOMIC ENTOMOLOGY be entrusted to an Editor, and an Associate Editor and a Business Manager nominated by an Advisory Committee of six members which latter shall be elected by the Association, two members to serve three years, two members to serve two years and two members to serve one year, and that thereafter two members be elected annually for a term of three years.

3. That, recognizing the arduous duties of the Editor and the Business Manager and the great value of their services, the Editor be paid an honorarium of one hundred dollars annually, and the Business Manager an honorarium of one hundred dollars annually.

4. Since the Association must assume corporate form in order properly to conduct the business of the JOURNAL, it is further recommended that the American Association of Economic Entomologists be now incorporated to succeed the American Association of Economic Entomologists, unincorporated, with the following Constitution and By-laws:

A. L. QUAINANCE,
A. D. HOFKINS,
W. C. O'KANE,
Committee.

W. C. O'KANE: Your committee believes that if you choose to accept this plan, it would be wise to submit this constitution to a lawyer to-night in order that its phrasing may be examined to see whether any word here or there at least need be changed in order to make it conform to the proper legal phrasing. It, therefore, reports merely these four recommendations, without a recommendation as to the wording of the constitution, so that, if you decide to accept the report, the constitution may be submitted to him to-night and to you again tomorrow.

E. D. SANDERSON: I would like to ask a question. Was the idea, that the dues should not include the subscription, to avoid the post-office difficulties?

W. C. O'KANE: The post-office authorities have ruled that a sep-

aration must be made. If we assume corporate form, a separation must be made of dues and subscription.

E. D. SANDERSON: We could handle that by a club rate.

W. C. O'KANE: It still is permissible to have a sliding scale, as now exists.*

E. D. SANDERSON: We could handle that, Mr. President, I should think, by adopting the amendment suggested yesterday.

W. C. O'KANE: That plan was mentioned by the committee, but not included in the recommendations, because, in adopting the constitution for an incorporated association, if you choose to incorporate, the existing constitution can be used instead of the one with yesterday's amendment. In other words, there is no use in amending the constitution of the incorporation.

B. P. MANN: Mr. President, I have just had experience, within a few months, with a movement that lasted two years, of substituting a new corporation for an old one, and the decision was that, in starting a new corporation, you start a new organization. It is a new organization without any regard to its past history.

PRESIDENT F. L. WASHBURN: What is your pleasure, Gentlemen, with regard to this matter? It is a pretty serious step, of course.

E. D. SANDERSON: Mr. President, to get it before the Association, I would move that we accept the report of the committee and instruct them to proceed and report for final action tomorrow. That is, we accept the spirit of the report without committing ourselves. Instruct them to go ahead and put it in proper legal shape, so we can take final action tomorrow.

A. L. QUAINANCE: I wish to point out that there is no necessity of having a lawyer pass on the form of a constitution unless we can secure favorable action from the Association.

PRESIDENT F. L. WASHBURN: The motion is made and seconded that the committee's report be accepted and that the committee continue its work until tomorrow, finding out the legal aspects of the case, and report for final action tomorrow morning.

PRESIDENT F. L. WASHBURN: Those in favor of the motion will say "Aye." Opposed, "No." Carried. The committee will report tomorrow morning, on the results of their further investigations.

The President and Secretary have prepared a telegram to be sent Dr. Smith by night-message, which reads as follows:

"Washington, D. C., December 28, 1911. Dr. J. B. Smith, New Brunswick, N. J. The American Association of Economic Entomologists, at its first session, unanimously voted to extend to you their sympathy in your sickness and to express their great regret at not having you with us at this meeting, and their hope that you will soon be able to again take up your work.

*(Signed)

F. L. WASHBURN, *President.*

A. F. BURGESS, *Secretary.*"

If I hear no criticism of that, I will infer that it is acceptable to you as worded.

The following business was transacted at the closing session, Friday morning, December 29.

PRESIDENT F. L. WASHBURN: We will call for the report of the Committee on Resolutions, by Mr. Parrott.

REPORT OF COMMITTEE ON RESOLUTIONS

Ladies and Gentlemen of the American Association of Economic Entomologists:—

Whereas,—The United States National Museum, the Entomological Society of Washington and the Cosmos Club have most generously furnished accommodations for the meetings of our Society, and have contributed in so many ways to the comfort and enjoyment of visiting entomologists, be it

Resolved, That the sincere thanks of the Association be extended to the proper authorities.

Whereas,—The suppression of the Gypsy Moth is the most serious tree-insect problem, which confronts the United States, be it

Resolved, That the State officials in the infested area, and the United States Government be urged to exert every effort to prevent the further spread of the pest, and to secure its control, and be it further

Resolved, That in view of the enormously large territory covered by this insect, the several States concerned and the United States Government be urged to render the financial aid necessary for the most efficient prosecution of the work.

Whereas,—The obituaries of members of this Association are invariably printed in at least one of the entomological journals of this country, and usually in several, and it would therefore seem unnecessary to duplicate them in a magazine devoted to the results of investigation where space even for this purpose is limited,

Resolved, That we recommend that the memorial resolutions hereafter take the form of a necrology only, and be prepared by the Secretary of the Association.

Respectfully submitted,

P. J. PARROTT,
S. J. HUNTER,
W. C. O'KANE,
Committee.

On motion, adopted.

Report of the Committee on Auditing.

SECRETARY A. F. BURGESS: Mr. Chairman, I have the Report of the Committee on Auditing.

REPORT OF THE AUDITING COMMITTEE

Your auditing committee for the 24th annual meeting begs to report that it has carefully examined the accounts of your Secretary and has found them in satisfactory condition.

Respectfully submitted,

J. G. SANDERS,
A. L. QUAINANCE,
Committee.

Adopted as read.

Report of the Committee on Memorial Resolutions, Professor Fernald, Chairman.

REPORT OF THE COMMITTEE ON MEMORIAL RESOLUTIONS

Mr. President and Gentleman of the Association of Economic Entomologists:

Your Committee on Memorial Resolutions herewith submits its report.

During the past year death has removed from membership in this body DANIEL W. COQUILLETT, CARLOS E. REED and F. W. TERRY. The first of these was for many years one of the most prominent of American entomologists; the second a pioneer in a region hitherto almost untouched; and the third a man whose work had already given promise of large results to follow.

This body desires to place on record its sense of the great loss which the death of these workers entails upon our science and our Association.

H. T. FERNALD,
T. J. HEADLEE,
J. B. SYMONS,
Committee.

On motion, the report was duly adopted.

Report of the Committee on Membership, Professor Osborn.

REPORT OF THE COMMITTEE ON MEMBERSHIP

Your committee on membership begs leave to report the following recommendations:

For foreign membership:

T. G. Anderson, Nairobi, British East Africa.
K. Escherich, Forstschule, Tharandt, Dresden, Germany.
A. T. Gillanders, Alnwick, Northumberland, England.
G. H. Grosvenor, University Museum, Oxford, England.

For transfer from associate to foreign membership:

A. H. Rosenfeld, Estacion Experimental Agricola, Tucuman, Argentina.

For transfer from associate to active membership:

George A. Dean, Manhattan, Kansas.
R. W. Harned, Agricultural College, Miss.
W. B. Herms, Berkeley, Cal.
J. S. Houser, Wooster, Ohio.
A. H. Jennings, Dallas, Texas.
H. F. Wilson, Corvallis, Oregon.

For transfer from active to associate membership:

E. L. Dickerson, New Brunswick, N. J.

For associate membership:

Wm. Barnes, Decatur, Ill.
E. W. Berger, Gainesville, Fla.
A. C. Burrill, Madison, Wis.

D. J. Caffrey, New Haven, Conn.
 P. G. Cardin, Santiago de las Vegas, Cuba.
 A. B. Champlain, Harrisburg, Pa.
 B. R. Coad, Dallas, Texas.
 G. C. Crampton, Amherst, Mass.
 Wm. Davidson, San José, Cal.
 H. E. Ewing, Corvallis, Oregon.
 Leonard Haseman, Columbia, Mo.
 M. M. High, Brownsville, Texas.
 W. O. Hollister, Detroit, Mich.
 H. B. Hungerford, Lawrence, Kansas.
 J. F. Illingworth, Ithaca, N. Y.
 Cornelia F. Kephart, Durham, N. H.
 W. V. King, Washington, D. C.
 L. S. McLaine, Amherst, Mass.
 A. L. Melander, Pullman, Wash.
 C. S. Menagh, Washington, D. C.
 E. W. Mendenhall, Columbus, Ohio.
 F. B. Milliken, Manhattan, Kansas.
 J. A. Nelson, Washington, D. C.
 F. B. Paddock, College Station, Texas.
 D. C. Parman, Dallas, Texas.
 W. S. Regan, Amherst, Mass.
 V. I. Safro, Corvallis, Oregon.
 H. L. Sanford, Washington, D. C.
 H. B. Seammell, St. Anthony Park, Minn.
 H. C. Severin, Brookings, South Dakota.
 F. L. Simanton, Washington, D. C.
 George A. Smith, Boston, Mass.
 Harrison E. Smith, Melrose Highlands, Mass.
 M. T. Smulyan, Amherst, Mass.
 M. P. Somes, Minneapolis, Minn.
 A. J. Spangler, Lawrence, Kansas.
 Warren Williamson, St. Anthony Park, Minn.
 W. B. Wood, Washington, D. C.

The following members have withdrawn during the year:

C. F. Adams, E. F. Hitchings, A. H. McCray and J. W. Toumey.

Three active and four associate members are in arrears for dues for three years and it is recommended that the Secretary notify them of their delinquency and if the amount due is not paid within three months that they be dropped from the roll.

Respectfully submitted,

HERBERT OSBORN,
 E. D. BALL,
 E. P. FELT,
Committee.

PRESIDENT F. L. WASHBURN: It is moved and seconded that the Secretary cast a ballot electing the nominees to membership. Carried. The Secretary is instructed to cast a ballot in their favor.

PRESIDENT F. L. WASHBURN: We will hear the report on the relations to the Society for the Advancement of Education in the South.

REPORT OF SPECIAL COMMITTEE

To the Association of Economic Entomologists:

Your special committee appointed to consider the invitation of Mr. H. E. Bierly, General Secretary of the Society for Advancement of Education in the South, to meet in joint session with that society, begs to report as follows:

We find, on investigation, that the meeting of the Society named is now being held in Atlanta, Georgia, and a joint meeting at the present time is therefore impossible.

The Committee is of the opinion that joint meetings of the Society for Advancement of Education in the South and the American Association of Economic Entomologists would not be to advantage, owing to the marked difference in the nature of the work being done by these respective organizations.

Your Committee, however, fully recognizes the great importance of the work being done by the Society for Advancement of Education in the South, and recommends that our southern members, as individuals, affiliate with that Society wherever possible and practicable to do so.

Your Committee further recommends that the Secretary of our Association be requested to address to Mr. Bierly a letter of thanks for the invitation extended, together with a copy of this action.

WILMON NEWELL,
E. L. WORSHAM,
W. E. RUMSEY,
Committee.

On motion, the report was adopted.

PRESIDENT F. L. WASHBURN: We would like to hear the report, Mr. O'Kane, of the committee that was appointed to consider the taking over of the JOURNAL by the Association.

W. C. O'KANE: Mr. President and Members of the Association, the committee had an informal talk with an attorney in Washington, who says that the existing constitution will adapt itself all right to the corporate form, if the Association decides to adopt the corporate form, so that this phase of it, as far as the committee can tell and after this hurried examination by the attorney, seems to be all right, and, therefore, the committee's report is rendered to you in the shape in which it was read yesterday. I shall read that again, if you wish.

The report given on page 20 was read and also the following changes to the constitution and the by-laws:

Article I, Section 2, add "(5) to publish the JOURNAL OF ECONOMIC ENTOMOLOGY;" Article III, Section 1, line five, substitute "the Board of Directors" for "an executive committee"; To article III, Section 1, add "Annual dues shall not include subscription to the JOURNAL OF ECONOMIC ENTOMOLOGY."

PRESIDENT F. L. WASHBURN: You have heard the report of the committee. What is your pleasure?

A MEMBER: I move its adoption. Motion seconded.

SECRETARY A. F. BURGESS: Mr. President, I would like to ask about one thing. If I understood the reading correctly, the Advisory Committee was to be of six members, two to be elected for three years, two for two years, and two for one year, and no further provision was made. It seems to me there ought to be a provision to this effect, —that thereafter two members should be elected for three years, so as to make the committee continuous. I didn't hear that in the report, and I think that clause ought to be added.

W. C. O'KANE: That was the intention. We were thinking more of the arrangement of the Board and Editors than of that particular detail.

Adopted by unanimous consent and added to the committee's report.

A. D. HOPKINS: Mr. Chairman, there is another thing I think should be added with regard to the Executive Committee, the chairman of the Advisory Board should be a member of the Executive Committee.

W. C. O'KANE: The constitution doesn't specify standing committees.

A. D. HOPKINS: Well, we can specify the chairman of a given committee to act on the Executive Committee.

SECRETARY A. F. BURGESS: If I might suggest, the Executive Committee consists of the officers of the Association,—the President, two Vice-Presidents and the Secretary. Those four men are the Executive Committee. Now, if you make a member of your Advisory Committee, or chairman of your Advisory Committee a member of the Executive Committee or Board of Directors and he is going to continue for more than one year, it will be necessary to elect him President, a Vice-President, or the Secretary of the Association.

E. P. FELT: The Advisory Committee, as proposed in this report, is simply the Advisory Board of the JOURNAL OF ECONOMIC ENTOMOLOGY, under a new name, and it is supposed to give advice regarding the general policy of the JOURNAL. It was continued to give stability and conservatism to the JOURNAL OF ECONOMIC ENTOMOLOGY, and the nomination of the officers of that JOURNAL was put in the hands of this committee. I see no particular need of adding the name of the chairman of that to the Executive Committee, though I do not object. It strikes me that it is going to complicate matters without any very material gain.

A. D. HOPKINS: I fail to see where there is any possible complica-

tion in adding to the Board of Directors. I wish to make a motion in this form, that "the above officers, together with the chairman of the Advisory Committee, shall constitute the Board of Directors," if we adopt this Board of Directors rather than Executive Committee. I think there is very little difference. I think an Executive Committee will legally be considered as having the same status as a Board of Directors. I merely present this as my opinion, as a desirable thing to do.

PRESIDENT F. L. WASHBURN: You move that as an amendment to the original motion, which was to adopt the report?

A. D. HOPKINS: Yes.

PRESIDENT F. L. WASHBURN: Any second to that?

E. D. SANDERSON: I will second that, to get it before the house. I would like to ask a question, and that is, are the duties of this Advisory Committee defined in any place in the constitution?

E. P. FELT: The duties of the Advisory Committee, I think, are defined in the report of the committee made to the Association. It states how they shall be elected, and that they shall nominate the officers of the JOURNAL.

E. D. SANDERSON: The Advisory Board has acted as such on general matters of policy and on matters of business policy, for instance, the consideration of advertising has been referred to that Board, and I think it highly desirable that we have a Board of this kind, and, without any criticism of the management of the JOURNAL, which would hardly be in order, I do believe that we should have a Board who would take a little more active interest in the policy of the JOURNAL, and I think we ought to continue the members of that Board from year to year, having one man as chairman, and having him, in addition to the Editor and the Business Manager, as a Director. I think that such a policy obtains in some other associations.

HERBERT OSBORN: I would like to suggest that Professor Sanderson may not know how much interest the committee has taken and how closely we have watched the things that appeared in the JOURNAL, and how quick to detect if it were going astray. (Laughter.)

E. D. SANDERSON: Mr. President, I haven't been in a position to judge of that, but I didn't mean that as a criticism of the Advisory Board at all, but merely that we do want the benefit of judicious criticism.

PRESIDENT F. L. WASHBURN: There is a motion before the house in the form of an amendment, which almost takes the form of a minority report, Dr. Hopkins, because I notice you were on the committee for which Mr. O'Kane reported.

A. D. HOPKINS: Well, as I understood it, the motion had been made to adopt, and it is open for discussion.

PRESIDENT F. L. WASHBURN: The motion from your committee was to adopt the report of your committee.

A. D. HOPKINS: I am presenting this, not as a member of the committee, but as a member of the Society.

PRESIDENT F. L. WASHBURN: The chair is a little bit in doubt as to the original wording of the constitution and what bearing Dr. Hopkins' amendment will have on that wording, but he is ready to present it to you, and we will now, if you please, vote on the amendment as given by Dr. Hopkins. Those in favor of the amendment will say "Aye." Those opposed, "No." The motion is lost. Now we will vote on the original motion, to accept the report of the committee as given. Those in favor will say "Aye." Opposed, "No." Carried.

Is the Committee on Nominations ready to report?

REPORT OF THE NOMINATING COMMITTEE

The nominating committee respectfully submits the following report:

For President, W. D. Hunter;

For First Vice-President, T. J. Headlee;

For Second Vice-President, R. A. Cooley;

For Secretary, A. F. Burgess;

For Councillors for the American Association for the Advancement of Science, H. E. Sumner, E. D. Sanderson;

For members of the Advisory Committee of the *JOURNAL OF ECONOMIC ENTOMOLOGY*,

For three years, L. O. Howard and S. A. Forbes;

For two years, Wilmon Newell and C. P. Gillette;

For one year, H. T. Fernald and Herbert Osborn;

For Committee on Nomenclature, Herbert Osborn.

Signed,

E. P. FELT,

E. L. WORSHAM,

I approve except as to the nominee for president.

W. D. HUNTER,

Committee.

PRESIDENT F. L. WASHBURN: You have heard the report of the Committee on Nominations.

T. B. SYMONS: I move the Secretary cast a ballot for the officers recommended by the committee. Carried.

PRESIDENT F. L. WASHBURN: Under the head of "Miscellaneous Business," you probably know, that the nurserymen and the horticultural inspectors have come to a most harmonious understanding, and that we are justified, all of us, in pushing the

bill which has been framed and which we will present to Congress next year, with the few amendments read last evening at the meeting of the Horticultural Inspectors. Therefore, is it your pleasure, as a body, to officially endorse this bill already endorsed by the Horticultural Inspectors?

E. D. SANDERSON: Mr. President, I take it that the Committee on Legislation has the same report to make that they had last night for the Horticultural Inspectors. I move the report be adopted and that the Secretary be instructed to forward to the President of the Senate, the Speaker of the House and the Chairman of the Agriculture Committees, the endorsement of this Association of the bill in its amended form, as recommended by the Committee.

The amendments agreed upon with the nurserymen in the meeting for the Horticultural Inspectors were outlined and the motion duly carried.

T. B. SYMONS: I would add that the committee recommends that the present committee be dismissed, and that a new committee be appointed, and that the same funds given last year be placed at its disposal the coming year. Motion seconded and carried.

The chair will be pleased to appoint three men from this body to represent us in matters of legislation here in Washington and elsewhere, to work in conjunction with the three members of the Horticultural Inspectors' Association, and I therefore appoint the following members of this committee: Mr. Sanderson, Dr. Forbes and Dr. Felt.

T. B. SYMONS: Mr. President, I would like to report, as chairman of the Committee on Affiliation of the Horticultural Inspectors, that the committee recommends that it be continued to consider this matter for another year. The report was adopted as presented and the committee continued.

W. C. O'KANE: Mr. President, one matter in connection with the incorporation of this Association. There are necessary legal papers to be drawn up and signed, and, therefore, I should like to make a motion that this part of the proceedings be entrusted to our Executive Committee, the Board of Directors, consisting of the President, the two Vice-Presidents and the Secretary. The motion was duly seconded and carried.

HERBERT OSBORN: I would like to ask if, under the election of officers, it is necessary to propose the Editor, Associate Editor and Business Manager of the JOURNAL. These names have been suggested by the Advisory Committee, who is prepared to make the nominations. We nominate, for the Editor, Dr. E. P. Felt; Associate Editor, W. E. Britton, and Business Manager, A. F. Burgess.

PRESIDENT F. L. WASHBURN: You have heard the nominations by the committee.

PRESIDENT F. L. WASHBURN: It is moved and seconded that the President cast the ballot for the election of these gentlemen as officers of the JOURNAL. Carried.

F. D. BALL: Mr. President, was the Report of the Committee on Affiliation with Agricultural Organizations read? We had a very fine meeting of the Societies at Columbus, and a number of them ratified that constitution.

PRESIDENT F. L. WASHBURN: There should have been a report but I understand that the committee desires further time.

F. D. SANDERSON: Mr. President, I would like to call attention to two things. In the first place, the Committee on Entomological Investigations is a standing committee, and I think the intention was to have the men nominated the same as our other standing committees, in rotation, putting two new men on each year. If that is correct, there should be two men named by the nominating committee, and, personally, I would like to be relieved from duty on that committee. The other point is that I should like to suggest to the incoming President and Secretary that they go over our list of members and send a list to the Permanent Secretary of the American Association for the Advancement of Science of those members which should be made fellows. There will be a revision of the list of fellows at the next meeting, and all men who are professionally engaged, who have a professional standing in entomology, are entitled to be fellows, and it is the desire of the Council that they all be made fellows.

PRESIDENT F. L. WASHBURN: Ordinarily we have a motion that we hold our meeting at the same time and place as the meeting of the American Association for the Advancement of Science. Such a motion was carried.

R. A. COOLEY: Mr. President, in an entirely informal way, and not to further encumber our records, it seems to me desirable that we, as an Association, have in mind the practicability or desirability of dividing the Association conservatively into sections. If the Horticultural Inspectors are affiliated with us at a later time, it would seem desirable to have a Section of Horticultural Inspectors. If the Apiary Inspectors' Association is affiliated, it would seem to be desirable to have such a Section. I think, though I have not worked out the details, that this may distinctly improve our programme, and I hope that the Committee on Affiliation will have this matter in mind in connection with their deliberations so that they may at least have convictions should this matter arise in the near future, as seems likely to be the case. It occurs to me that the Associa-

tion of Economic Entomologists, in point of attendance and in point of interest, is a fair sample of almost any division of the American Association for the Advancement of Science. Several of these sections have divided programmes. There has been an increasing tendency to crowd our programme. The discussions following papers should be more deliberate,—in some cases more extended. I believe it might be well to have a standing committee on programme and that papers presented might be reviewed. This may have been previously discussed. It might be well to classify our programme, so that we will be following some natural and logical classification and, as individuals, attend one or another section, according as our interests lead us. I have nothing definite in mind and yet I feel certain that the tendency of affairs is in that direction and that, eventually, we will arrive at some such division of our programme,—a discussion of insecticides, perhaps, in one section, life histories in another, methods in another,—or some other such classification.

E. D. SANDERSON: Mr. President, I want to heartily second what Professor Cooley has said. It seems to me that it is the line of natural evolution of this Association, as of the Botanical and Chemical Societies, and they are divided as he has said. The main objection to the several organizations, it seems to me, is that it makes an unnecessary amount of machinery and there is always a chance for conflict in arranging programmes, places of meeting, etc. With one general secretary of an organization looking after the sectional programmes, this would be easier to handle. Then there is another matter, and that is that we are getting in this organization a number of men who are not interested in entomological problems which appeal to many others. I know men who are engaged in shade tree work in our large cities, and others, like our Secretary here, who are working on the gypsy moth in New England, who are very little interested in the Hessian Fly in Kansas, for instance. Now, there is a large number of these city entomologists, we might say, who, if we had a section for that sort of work, might come into this Association, and who are not interested at present. I believe this is the natural line of evolution.

E. P. FELT: Mr. President, it seems to me that we could probably work out something of that kind, and I think the Secretary would be the party to handle it. That is, one man in one place receives all the titles. If he has to consult with one man 350 miles away and with another party on the Californian coast, it is pretty difficult, and I believe that, with just a little study on the proposition, our Secretary could devise a tentative plan for a sectional programme at our next meeting, and group the papers accordingly, and then the Association, at the beginning of the session, could vote on whether it would have a

sectional programme or not. Begin the first session, perhaps, with general papers, and then possibly the next day divide along different lines, as determined by the subject matter available.

PRESIDENT F. L. WASHBURN: Of course, if they determined not to do that, you could not carry out the programme for that year.

E. D. SANDERSON: I am not particularly in favor of a programme committee. I believe the Secretary is the man to handle that, but there is a point as regards organization. If these affiliations could be arranged, we would have, in some respects, to change our constitution, to provide for admission of certain classes of membership which we don't now, and that should be considered by this committee and put in definite shape so that we can have something tangible to discuss next year.

PRESIDENT F. L. WASHBURN: It looks to me as if we are coming to that, the abstracting of papers, or else have sections. We can't do justice to our programme.

I wish to thank the Secretary for his very kindly and generous services, with which we are all familiar.

E. D. SANDERSON: Mr. President, in regard to the nomination of this Committee on Entomological Investigations, in view of the fact that the Nominating Committee haven't had time to consider it, I move that the incoming President name a committee of three on that subject, and that hereafter the Nominating Committee nominate one new member on this committee each year, the same as is done with other standing committees. I believe that three will do as well as five on this committee, and it will be uniform, then, with our other standing committees. Motion duly seconded and carried.

WILMON NEWELL: Mr. President, I wish to move that this Association tender to the retiring President a hearty vote of thanks for his very efficient administration. Carried.

T. B. SYMONS: I move we adjourn. Carried.

PART II

PRESIDENT F. L. WASHBURN: I will ask First Vice-President Ball to take the chair.

VICE-PRESIDENT BALL: You will now have the pleasure of listening to the annual address of the President, Professor Washburn.

THE RELATIONS OF THE STATION ENTOMOLOGIST TO HIS ENVIRONMENT

F. L. WASHBURN, *Entomologist, State Experiment Station, University of Minnesota, Minneapolis*

1. The Economic Entomologist and General Conditions Surrounding his Work:

At the very beginning it must be said that the Economic Entomologist occupies an anomalous position among professional workers. He is not a scientist in the strictest sense of the term, nor is he a systematist, and he certainly is not a farmer, whom it is his duty to serve, but, partaking somewhat of each of these classes, he is looked at askance by all three. Reviving certain ancient terms, we might say the "egg-slicers" of Johns Hopkins have no use for him, the "species makers" at Washington would hardly receive him with open arms, and the farmer, as you know, looks with suspicion upon anything not sufficiently connected with the soil to warrant his stamp of approval. We find the entomologist, then, a man "betwixt and between." His cousin, working on entomology in an institution not given over to economic questions, can choose the problem to which he feels especially called, while the station entomologist has to be ever ready to solve riddles, not of his own seeking always, but questions of all kinds which are thrust upon him, frequently quite unexpectedly, and in such numbers that they cannot be solved in a life time.

On the other hand, the work of the scientist is not, by any means, appreciated in the practical world of today among such a large class as is the work of that one who makes use of a few facts determined by the former, applying them in a way advantageous to the public.

The successful economic entomologist of today is essentially a practical man, keenly observant, with a knowledge of botany and general agriculture, a judge of human nature, a good mixer, a good speaker, and, perhaps we should add, a good politician, in the cleanest interpretation of the term. He is, withal, systematic in his work, a careful note taker, just and generous to his fellow workers.

Finally, these qualifications must rest upon a good foundation in the way of preparation for the work. He publishes what he thinks he knows, sometimes publishing too quickly, be it said, for he frequently has cause to change his views after his earlier conception has been frozen in cold type. He makes mistakes, Heaven protect us from the man that does not! With all the printed matter on entomology coming to his desk, he may fall into the habit of skimming superficially

over literature bearing upon his work, and may, and sometimes does, draw incorrect conclusions from his reading. The habit of hasty reading is happily overcome, however, by the use of subject index cards, with which we are all familiar.

Points upon which many entomologists (as well as other station workers, be it said) may be criticised are plagiarism, non-acknowledgment of facts or illustrations obtained from other entomologists, the taking away of records of experiments, and making use of same after leaving an institution; borrowing specimens for a period of ninety-nine years or more; deliberately attempting to obtain an offer from some other institution in order to make use of it in getting a raise of salary in the station in which he is already employed, and other misdeeds of a more or less glaring nature.

Perhaps one of the worst failings of the average entomologist is to accept without proof the statements or conclusions of his fellow workers, and errors are thus transmitted sometimes from one generation to another, until some one more thoughtful than his contemporaries or predecessors, by his own work discloses the error of a certain statement. Unfortunately there are among us few entomologists bold enough to publicly criticise their own publications, when they have discovered a mistake, though an early rectification might do a world of good. Duplication of work, then, would seem desirable both as a check, and to put an end to the transmission of erroneous statements.

We are all, I think, learning that it is unwise to make predictions as to insect injury. As you may remember, it was predicted that the Cotton Boll Weevil would never advance to the point it has reached, yet, in spite of this, and similar warnings, I am today repeatedly predicting in Minnesota that no grain aphid will, on account of our climate, which is practically as favorable to aphid parasites as to the aphids themselves, cause any serious injury in our fields.

The importance of constant watchfulness over our own work and our own words cannot be overestimated,—a mistake before the public is costly,—we lose the confidence of our constituents; as President Vincent of our own University has aptly said: "The discomfiture of the expert is joy to the average citizen!"

One great disadvantage we labor under lies in the fact that we do not hear all the criticism which may be given our work. We are applied to for relief, we give that relief to the best of our ability, and in eight cases out of ten that is the last we hear of it. Our constituent may have failed to get good results, either through his own negligence or carelessness, or through our not understanding all the conditions surrounding his problem. He may be heaping maledictions upon us

in his own mind, of which maledictions we are profoundly unconscious. We work largely, be it said, under the ban of the "silence of the critical." It is a far cry from economic entomology to poetry, yet I am led to enlarge upon this by quoting a few lines from a poem by O. W. Firkins of the University of Minnesota, not yet published. This silence is like

"The silent rise, the silent set of suns;
The silence wherein blooms and fades the rose;
The silence of illimitable snows;
The soundless sap, the blood that noiseless runs;
The silence of poised storm and brooding guns," etc.

I have believed in the past most thoroughly in the entomologist, and all scientists in fact, or men of any profession, having hobbies quite distinct from their work. I have believed, and still believe, that any man in a profession who has a lively interest in some recreative work or play brings so much more to his specialty, yet I see danger, as we advance toward middle life and beyond, and our ambition in our profession becomes possibly a little less keen, that one may give too much attention to a hobby, and too little to his specialty, in other words, the hobby and the specialty may change places. This is, most certainly, to be guarded against.

2. Relations of the Economic Entomologist to the Farmer:

We can perhaps all unite in saying: "God bless the insect!" It creates the entomologist, and makes for diversified farming; it turns wheat growers, corn growers, cotton growers and others into genuine farmers, and our relation to the latter is perhaps the most important of all, since it was to promote the cause of agriculture that our office was created.

It is a pleasure to note that while some years ago any professor was looked upon as unpractical, a bookworm, and a dreamer, the professor of today is a specialist, he is appealed to frequently by the public, and despite the criticism previously alluded to in this address, this fact, in connection with our work, is encouraging, and it is a pleasure to realize that it is appreciated.

The inducing farmers to accept results, however, and teaching them how to apply an effective remedy for certain destructive pests is a difficult and very important part of our work, more difficult, perhaps, than finding the remedy itself. It represents almost one half of the problem; this need of constant reiteration of methods which you may have published and spread broadcast in the past, feeling secure in the belief that every one knew and practiced them. We frequently awake to the realization that a large portion of our farmers are ignorant of

the simplest truths published in the earlier part of our state work. I think we are frequently not explicit enough with farmers; they are suspicious of new remedies, slow to adopt them, and some still have the attitude of holding the professor's results in contempt. Here is where the work of the Agricultural Extension Division can be and is effective.

The value of a personal interview also cannot be overestimated; personal contact counts for much more than letters, which latter, even though carefully worded, are sometimes misleading, and may possibly convey an impression entirely at variance with the thought of the entomologist. This impression might be easily righted in a conversation with a farmer, or in a general talk before a body of farmers. Then, too, a trip to see a farmer, or a body of men interested in agriculture, is to them a compliment and a source of gratification. It cannot be denied that our constituents are hard to win over to our views. As a rule orchardists are progressive and glad to make use of the entomologist's results; or, is it that they realize a lower price is paid for fruit exhibiting any blemish caused by an insect? Many lumber men, possibly, are quick to take advantage of facts disclosed by our work, but we venture to say that not a very large proportion of the latter follow the scientific methods suggested by Hopkins, intended to control the devastations caused by various insects. Some market gardeners are alive to the value of modern methods; some invent good methods of control themselves, but the general farmer, as stated above, is hard to win over; it is with the younger generation, the coming farmers, that our work is the most effective. The importance of personal contact with the farmer is so great that if the chief himself cannot give time to it, we believe there should be at all times during the growing season, men in the field who represent the chief. These men should be carefully chosen. They should be efficient, honest, well grounded in their work, and last, but not least, mature, and good mixers. Do not send out boy assistants among your constituents.

Some farmers, particularly the foreign farmers, are suspicious and fatalistic, both of which qualifications are obstacles to our work. They are also sometimes suspicious of friendly overtures, or, on the other hand, expect the state to go to all the expense and trouble of freeing their fields of vermin.

Manifestly the same general axioms above cited, would apply to our relations with stock raisers, housekeepers, nurserymen and others, though the inspection of domestic and imported nursery stock plays such a prominent part in our work that it calls for and will receive, in this address, a chapter by itself.

3. The Relation of the Entomologist to the Director of the Station, to Other Administrative Officers, and to his Fellow Station Workers:

While there is a marked difference of policy in administration in different stations, and while some of the younger institutions have had to go and are going through a period of political upheaval, very disastrous to good work, most of us, I assume, are fortunate in being associated with directors of broad views, honest in the treatment of their staff, and, in many instances, we find a bond of friendship often, which, far from being the cause of any partiality, goes a long way toward advancing harmonious and productive work. Due deference, of course, is to be paid the director and his position in his official capacity. He frequently acts as an advisor without dictating, or in any way hampering the projects of his entomologist.

Where the station is connected with the state university, as it is in many of our states, official communications from the entomologist to the president and board of regents should, and generally do, go through the director to the chief executive. The business relations, therefore, of the entomologist, are entirely with the former, and it is unwise, as some of the younger and more hasty, and a few of the older entomologists may have discovered, to attempt to go around the director. Any direct clash, or an appeal to higher authorities is apt to result disastrously. This is as it should be, even though the entomologist may have right on his side, for any other result, in nine cases out of ten, would be disastrous to the discipline of the institution. Happy the entomologist where the station staff, aware of the fact that each one is working for the common good, and not ambitious to advance his own reputation at the expense of community interests, meet in council where projects of various kinds are discussed in a friendly and harmonious way.

I believe, since the faculty of the college, or the working staff of the station, is the bone and sinew of the institution, that there should not be so great a discrepancy between the salary of the directors or deans and the members of the working force as prevails in some of our institutions. Something nearer an equal footing goes far toward promoting the best work.

It is to be deplored that, in comparison with other divisions, the division of entomology is frequently allowed but small financial assistance for its work, rather lowering its importance in the eyes of the public and other station departments. While horticulture, agriculture, animal husbandry, etc., get, as a rule, liberal appropriations, the entomological appropriations are apt to be out of all proportion to the important relation the work bears to these leading subjects.

It is unfortunate, too, and in a measure accounting for the condition just cited, that from the public viewpoint economic entomology is not conspicuously constructive. People see the gratifying results produced in agronomy, horticulture, animal husbandry, and agriculture, and usually regard entomological work as of minor importance, a side issue, possibly, a little of which, a very little, is necessary to secure best results in the other branches of agricultural work.

A source of annoyance to the entomologist of a station, where the funds of his division are controlled by the university authorities, is frequently found in the relations to the comptroller or purchasing agent of the university. The ruling that requires all supplies to be bought by the purchasing agent is a "penny wise and pound foolish" policy, where the custom prevails of this officer accepting the lowest bid for material for scientific work. This results, at times, in the institution obtaining what the entomologist or other worker cannot use, and is an actual money loss to the institution. I have known, in the past, of a purchasing agent sometimes changing one's order, through a mistaken sense of economy, the agent having apparently thought something else would do as well. The loss and disappointment caused in this way could be prevented if the professor in charge were allowed to order his goods directly. While these mistakes and vexatious delays are to be deplored, we should respect the necessity which demands that an institution should be businesslike, and expenditures kept within its income.

Loyalty toward an institution on the part of its employees is, of course, an absolute necessity, but we must not overlook the fact that loyalty on the part of an institution toward its employees is equally necessary. An entomologist employed by a station on a given salary to do a certain stipulated amount of work, should not be compelled to add to his work and responsibility without a perfect understanding and an agreement to that effect between the director of the station and himself. This principle is undoubtedly recognized by most directors. When an institution, through its executive head, has adopted the policy of saying to members of its working force (and it is to be regretted that there are such institutions): "Show us a larger offer from another institution, and we will consider raising your salary," a deliberate invitation is extended to a worker to treat with other institutions with this object in view. Under these trying and unsanctified conditions I believe an entomologist is justified in seeking relief. The policy smacks too much of business methods and too little of professional ethics and college courtesy.

Co-operation in some large problem upon the part of members of a station staff does much toward doing away with selfish aims and

aspirations on the part of the individual. Where station workers intimately concerned with the work, take up the subject of corn, for example, or clover, or other crop, treating the problem in all its aspects, the force is working more as a unit, and we get more of a co-operative feeling than in any other way.

4. *The Entomologist's Relations to his Employees:*

Honesty, loyalty, ability and generosity are the prime requisites on the part of assistants in the entomological department; are they not also the requisites to be looked for in the chief entomologist in his relations to his employees? Should he not give all due acknowledgment to his assistants, if necessary erring a little on the side of generosity in this connection, to create good feeling and confidence?

The question of granting credit to assistants has been well and frequently discussed in this Association, and the consensus of opinion appears to be in favor of giving all credit for originality on the part of an assistant where he has done a piece of work in question entirely by himself, with little or no direction from the head. Even when such help has been given, some entomologists are altruistic enough to waive their claims in the work and give all credit to an assistant.

The general rule above mentioned, seemingly followed by all members, appears excellent, yet there are at times objections to the plan. Human nature is not always strong, and ambition on the part of an assistant to get credit for a piece of work is sometimes so great as to blind him to the advantage accruing from consultation. Some possibly will avoid consultation with the chief for that reason, and thereby the best results are not only not secured, but an entire season of work may be wasted. Frequently two heads are better than one in an entomological problem, and the assistant should be generous enough toward the work to admit that. One station worker known to me, chief of his division,—and there are probably others,—follows this method with seeming success; he will materially help an assistant in a project undertaken by the latter, yet allowing the assistant to have full credit. In return he expects his assistants to do the same in the projects that belong distinctly to him. • •

The young entomologist, for a few years, should be absorbent rather than exhalent. It would be well for him to follow the old adage to "say nothing and saw wood" for a while, and seek to bind his friends and employers to him with hooks of steel. One point, especially, he should bear in mind in connecting himself with an institution; namely, that all notes, records of work, photos, drawings, etc., made during working hours, are distinctly the property of the institution. This also applies to the notes (which must be something more than mental

notes) of the chief of the division, and covers the case where a temporary assistant takes away with him a duplicate copy of a report of his work, which he may, or may not use in another institution, or in some method in no way connected with the institution employing him when the records were made.

While on the subject of employees, let me say we should, I believe, adopt the policy of spending more money on men of high efficiency, rather than on apparatus or publications. Able men in economic entomology are so rare that only the institutions financially fortunate, and following a generous policy can hold them.

5. *The Relations of an Economic Entomologist to Students:*

Not all entomologists teach; on the other hand some have more teaching, much more, than is compatible with research work, and again, we find a favored few with just enough teaching to vary their other work. I believe, other things being equal, that the earnest investigator makes the best instructor. A platform speaker, one who is constantly addressing the public, is rarely a good teacher, since he acquires a looseness of expression, and a certain superficiality of thought which affects his teaching relations with students.

It is evident that there is not enough teaching of economic entomology, at least (possibly because the subject is looked upon by the authorities as a side issue); it is not taken seriously enough in many of our institutions, to enable us to turn out enough sufficiently competent men each year to fill positions offering emoluments of from \$1000 to \$2500 yearly. I am speaking now largely from my own experience. Every year we have demands upon our institution in this line which we cannot comply with, and it is to be hoped that you will all use your influence where needed, to strengthen this hitherto weak point in economic entomology.

6. *The Relations of an Economic Entomologist to Agricultural Extension:*

Agricultural extension has, in some of our institutions, the rank of a division, on the same basis as other divisions, and it has for its duties the placing before farmers in a popular way the results obtained by other divisions, as well as taking charge of meetings, such as, in some states, Farmers' Institutes, and the like, the holding of short courses for farmers, demonstrations in the field, demonstrations at fairs, exhibits, etc. Such a division in the station, and Agricultural College is of great value, relieving other divisions of much of the routine work otherwise demanded of them. I am now speaking of the only one with which I am familiar, namely, the Agricultural Extension Division in the Agricultural Department of the University of Minnesota. In the case of this division its enormous mailing list enables

it to get literature to a vast number of farmers; this literature consisting of extension bulletins, Farmers' Library and similar matter, as well as press sheets to state papers and the press at large.

The good accomplished by such work is great, though not always unmingled with disadvantages, for since the extension division staff is not made up altogether of specialists, and one man frequently has to talk upon a number of subjects in different fields, an entomologist is somewhat surprised, to say the least, at incorrect or half complete information in his line, emanating from such a division, and inasmuch as the entomological division gets blame or praise for anything in the insect line coming from the experiment station, I believe all questions relative to insects, received by the agricultural extension division should be referred to him, and that, in general, the work along different agricultural lines, as representing the different divisions, should be directed by the specialists on the station staff, whose work it concerns. This was, as stated above, evidently the original intention in establishing the division, and a plan which should be followed in any experiment station or agricultural college proposing this feature.

In November of the current year it was my privilege to hear President Butterfield discuss Agricultural Extension at the Columbus meeting. It seems that thirty-two states have agricultural extension in some form. It further appears to have been the idea of the committee that the extension division should be thoroughly co-operative when it is a part of an agricultural college, and that it should not act independently of other divisions. Technical subjects presented by the extension division should either be handled by station men directly engaged in such questions, or by extension men acting under the supervision of the station specialists. Otherwise we are apt to find the station men and agricultural college professors advancing ideas to students quite at variance with those promulgated over the state by the extension force. It would seem, then, that unless extension divisions feel the importance of this co-operation, and act accordingly, they fail in their purpose. It has further been suggested that not only should the extension division help the farmers along the lines indicated above, but that it is equally its duty to bring to the notice of station workers, agricultural conditions prevailing in different parts of the state which call for special attention.

7. The Relations of an Economic Entomologist to his Fellow Entomologists, and the Relations of this Association to the Public:

Surely these yearly meetings are of inestimable value, not only in affording each entomologist an opportunity to bring back to his state

new views of advantage to the citizens of that state, but also as an encouragement and stimulus in the way of our ideals and aspirations, the mere being together as a unit adds to our self-respect, and the strength of our cause. Like the traditional bundle of sticks which the old man bade his sons get together, we present together an impregnable cohort, though singly, in our own bailiwicks, each one of us has frequently to bend to the storm, and has felt from time to time, perhaps, not unlike a bruised and broken reed.

Though having interests in common, each of us is confronted by conditions somewhat different from those of his fellows. Each of us takes on, if you please, the "color" of his locality, and since different localities call for different lines of work, when we think of a certain individual his special line of work is suggested by his name. Finley's word "ergocentric" applies here, by which he would designate the method of regarding an individual in the light of his occupation or job, and measuring his efficiency in ergons. We expect an entirely different class of papers from men of different sections of the country; the mention of one man's name suggests grain pests; another, insecticides; another, boll weevil; others fruit insects, etc. Since we used the word "color" above, let us carry the fanciful illustration farther, and say that each one of us may represent a colored patch in the make-up of Joseph's coat, but collectively, we represent a pretty good coat, and unlike the woven garment of Biblical times, we will add materially to our strength and beauty as time goes on.

I believe, if any criticism is to be made upon this Association as a body, it is that we have in the past lacked organization, and have not realized the value of co-operation. This lack is being overcome, and Sanderson's motion that we keep in touch with each other's work for the purpose of co-operation, was a movement in the right direction. Apropos of this motion, I note that Dr. Smith, as early as 1895, in his presidential address, mentioned our needs along this line.

The present year's request, in connection with what we may well call the Sanderson-Headlee list, appears to call for too elaborate information. Few of us are willing to take the time to send to headquarters all of the data asked for. In our opinion it is sufficient to name the problem, and let each man determine how much information he cares to make public, and how far he cares to go in co-operating and discussing methods with some other man who has a similar problem. It might be said in passing that this publication of our projects in no way conflicts with the rulings in the office of Experiment Stations as regards Adams Fund projects. Dr. True, in deference to wishes expressed or unexpressed, is not inclined to make public a list of Adams Fund projects, simply in order not to offend any one desiring to keep

his project to himself, but he sees no possible objection to any entomologist so desiring, to make his Adams Fund project a matter of public information.

One word as regards our programme: That we should have more time has been our constant plea. I believe, further, that we would save time if the presidential address were made, and the first business session held in the evening.

I would suggest avoiding long technical papers with tables, all of which can be better read than listened to, and, I believe it has been decided to read by title only, except in symposia, those papers whose authors are not present. After all it is the personality of the man we seek and enjoy. We can read his paper if we wish to in our JOURNAL. We are fortunate in having this publication, and it certainly deserves the support of each and every one of us.

In looking over the list of projects of the present year, compiled by Chairman Headlee, I note activity along important lines, and believe (in spite of some minor criticism when the plan was suggested) that this work will do much to promote co-operation and progress. I have already given the report of the committee on the Entomological Employment Bureau. The need of some such action upon our part was shown at our last meeting, and has been apparent, I believe, for many years.

Regarding legislative matters, you all know the conditions under which we labor. I believe our legislative committee should be larger than at present— a committee of five or six can put up a bolder front before a Congressional committee than a committee of three, and it frequently happens that of the three only two can be at Washington at the proper time. A discussion of the so-called "Howard Bill" belongs more particularly to the Association of Horticultural Inspectors rather than to this Association, yet the Chair is ready and willing to put to vote any motion made along this line.

There is a bill pending before Congress, known as the Page Bill, which, I believe, materially affects us as station workers, and which appears to meet, according to utterances at the Columbus meeting, with decided objections upon the part of many station representatives. Under the provisions of this act a state would be given a large amount of money for extension work upon condition that the legislature appropriate an equal sum. Some states in which agricultural colleges are already very liberally provided for would benefit by this bill, but it would appear that, in states where the institutions are not so generously cared for, this bill, if it became a law, would work a hardship. It would be, in such states, very difficult for the station, and consequently, for the entomological department or division, to secure for

general work a decent allowance of state funds, since it would result in such a drain upon the state treasury to meet the demands of the Page Bill conditions, that some of the agricultural colleges and experiment stations would get but little state money for departments other than the extension division. It would appear then, if we were to take any active part as a body, in federal legislation, that this is a matter for our careful consideration.

The executive committee has made a most determined effort to influence the directors of the various stations to pay the way of their entomologists to these annual meetings. Your President with the knowledge and approval of the other members of the Executive Committee, met the Committee of the American Association of Agricultural Colleges and Experiment Stations on Station Policy and Organization at the Columbus meeting in November. At their hands the project received generous consideration, and we can congratulate ourselves upon the fact that we have made a step forward toward the desired goal. The text of the resolution as passed by the Association is as follows:

"At the request of one of the societies, with which members of the Station's Staffs would naturally be associated, the question of members of the staff attending the meetings of the Scientific Societies was discussed. Your committee believes that the leading members of the Staff should, for their own sakes, so far as they are able, attend the sessions of at least one such Society annually. It also believes that the Station administration should be alive to the fact that there are frequently meetings and conventions which the best interests of the Stations demand that it be represented. In such cases, the proper official should be sent as the Station's representative and at its expense."

The details of the working out of this policy belong to administrative bodies in connection with each station, and, therefore, it is left to each station to arrange. In considering this matter the committee on station organization and policy took the ground, naturally, that this should apply to all divisions; that it should not be regarded for a moment as a charity on the part of the station toward one of its workers, but rather as an advantage to the station to have its men at the meetings, thereby helping it to keep in touch with the most modern methods. Of course, the Association of Agricultural Colleges and Experiment Stations cannot dictate to the boards of regents, or boards of trustees, but, I believe that directors as a whole are trying to look upon this matter favorably, and it is for you as entomologists to present your claims to your various stations, and to use your influence in this direction as far as possible. It might be wise, perhaps, to ask for a general traveling fund as a part of your budget, of such a size as to enable you

to use some of it, when the proper time comes, to be present at these meetings.

While attending the above meeting I was struck with the value to the station entomologist of many of the papers and discussions, and I am quite of the opinion, an opinion shared by a number of the members of this association, that we would do well to affiliate with the American Association of Agricultural Colleges and Experiment Stations, not necessarily cutting off from the American Association for the Advancement of Science, but perhaps holding alternate meetings with each one of the aforesaid associations. An entomologist of the station is frequently brought into such intimate relations with the policy of administration of station affairs and agricultural college affairs that such an affiliation would seem to be most advantageous. Further, it is extremely probable that gradually associations and societies treating on subjects allied to ours will meet at the same time as the above named association, so that if our sessions were held prior, or after the sessions of the other societies, we would have an opportunity to attend the sessions of the societies referred to. I believe that under these conditions it would not be so difficult for station entomologists to have their traveling expenses to the meetings taken care of. I shall be very glad to leave this matter with you for your discussion and vote. Such affiliation may be considered from two standpoints; a personal standpoint, and the standpoint of the public. The worker has told me that he would prefer to be affiliated with the American Association for the Advancement of Science, because he gets more of a cultural uplift, as he expresses it, from association with the more technical and scientific workers. This thought may have occurred to others of us. On the other hand, the needs of our station work should be considered. How are these needs to be best supplied?

A few states, sad to relate, at least we know of one, have state laws making it impossible for a station to pay the way of any of its staff to meetings outside of the state. It is unfortunate and evidently arises from the thought on the part of the legislature that such trips are for pleasure, rather than for business. Entomologists should do, if they can, to convince farmers in the various states that these are not junketing trips. A director in a state so hampered would be acting along progressive lines if he sought to have such narrow-minded legislation repealed.

We are pleased to note the presence, as an active factor in our work, of the federal insecticide law, and to add that some of our states, Minnesota at least, have also state laws in no way conflicting with the federal law. These laws should serve to protect our farmers and orchardists from impositions.

Our relations to the Federal Bureau are so close that a word in passing may not be out of place. It is undoubtedly the policy of the Bureau, when sending its field workers into any state, either to co-operate with the station entomologist of such state, or have an understanding with him along this line. This is purely a matter of professional courtesy, and I believe such process is invariably followed by Dr. Howard.

It is a deplorable fact that the Department of Agriculture will not assist its men pecuniarily in attending these meetings, from which they would naturally reap so much profit. This results in a marked depletion in attendance of our meetings away from Washington.

I believe our method of electing officers is faulty and undemocratic. The appointing of a nominating committee of three by the president each year, who, in turn, select the president and vice-presidents for the following year, savors a little bit too much of a close corporation. I do not wish to be understood for a moment as intimating that our association has within it a political machine, far from it, and there may never come a time when we are guilty of such methods, yet we are growing, and, in years to come our numbers will be vastly increased. Therefore, to avoid any suspicion of nepotism in the future, I am going to suggest that we employ a different method of electing officers, in order that no available presidential timber, of which there is much in this association, be allowed to lie idle year after year. Whether such a change would take the place of a larger committee, or whether such a committee should be elected by members of the association rather than appointed by the chair, I leave to you to decide, supposing you care to make a change; I am merely advancing my own thought in regard to the matter.

8. The Relation of an Economic Entomologist to his Publications: Lectures, Bulletins, Correspondence, etc.:

The publications emanating from the office of an entomologist represent, undoubtedly, one of the most important features of his work. Consideration of the best time for publishing material, and the nature of the printed matter, the style of illustrations and other factors needed in order to accomplish the most good to those most concerned should receive our most careful attention. In this connection the economic entomologist stands in rather a peculiar position. He needs, in the first place, to "make good" if I may use that expression with his farmer constituents; at the same time his publications reach or should reach, a class of men and women who call for something a little different in the subject matter than that demanded by the farmer. This class we may designate as the general public. Thirdly: he has

his reputation to sustain among his fellow entomologists, and at the stations where they are located. Finally, our station entomologist is frequently state entomologist as well, and as such is dependent to some extent upon legislative support, and his publications have to be such as to place his work in a practical and otherwise favorable light before those to whom he looks for financial help.

Some years ago we listened to an admirable address by one of our older members, one whom we all respect and admire, in which, while criticising the tendency of some to make a display of themselves in print, he used the expression "beating the entomological drum," thus symbolizing the making of a great noise by an entomologist, and attracting attention thereby, although, as we know, there is nothing in a drum but air, and a superabundance of potential sound. The simile was good; at the same time the speaker referred to may have taken a too critical attitude toward the matter. As stated above, many entomologists are dependent, more or less, upon popular support. If they do not meet with that, their work, of necessity, stops. What more natural, and really praiseworthy thing than for them to realize that their work has to be thoroughly advertised over their respective states? They probably feel that they *have* to beat the "entomological drum," although it may not always be to their liking. We are prone, however, some of us, as mentioned elsewhere in this address, to rush into print without sufficient provocation, and it certainly behooves us to adopt some such watchword as "publish in haste and repent at leisure" to prevent many occurrences of vain regret and wounded pride.

I personally regard the illustrations accompanying our publications as also of extreme importance, believing we are all, both entomologists, and the public as well, children of a higher growth, and, as such, are attracted to pictures. I believe, if the farmer's eye is caught by a picture, he is more likely to read the subject matter connected therewith than if his attention were not so attracted. I believe it helps, also, to place, as far as possible, completely descriptive text under each photograph intended to instruct the farmers and general public. In my own work I use illustrations, photos, drawings and colored plates wherever I can, and, feeling as I do, would urge all entomologists, in asking for appropriations for their work, to endeavor to secure a generous amount which can be used for this purpose. Recall, if you please, the accurate and neat illustrations of Slingerland, the finished reports of Felt and others, and you will realize, I believe, how much such productions add to the reputation of the institutions they represent.

As to the comparative merits of photographs and drawings we all

know there are some subjects which lend themselves only to photography, and of the others the entomologist with a little experience, can readily determine whether a photo or drawing is called for. There are those, but few in number, I believe, who claim the camera should be used in all cases because, as they say "the camera does not lie" and the artist's or entomologist's interpretations are not always the true ones, the personal element being too largely represented. As a matter of fact you can all think of instances innumerable where the camera cannot be depended upon to bring out structural details.

I believe that as a general thing our bulletins, treating of some destructive insect, should contain, first, a brief popular description of the insect and its work, using drawings and photographs generously, and secondly, following the above, remedial and preventive methods. All of this could well be in bold faced type, and should be arranged in a form attractive to the eye. Following this, which represents the essential points, of course, from the farmers' standpoint, may well come the account of the work in detail in ordinarily small type, using whatever illustrations are necessary and available, the more the better, if they are pertinent; the author remembering that fellow workers at other stations may profit by a lucid explanation of methods. Acknowledgment of the source of authorship of illustrations not original should be made under each drawing or photo, not merely referred to in a prefatory note.

Postal card bulletins are, in a way, most excellent, as are also bulletins which take the form of spraying calendars. These latter are much appreciated by orchardists, and others who like explicit directions in this line, concisely put. You doubtless all have your views upon these points, in many cases far better than those briefly alluded to by the speaker, and we need give no more time to this feature. At the Minnesota Station the entomologist publishes occasional bulletins in the regular station series, also press bulletins as occasion demands, as well as circulars, the latter issued as publications from the office of the state entomologist. The station entomologist, who is also state entomologist, publishes in the latter capacity, a biennial report to the governor of the state. He and his staff also issue from April to August inclusive a monthly publication known as *Minnesota Insect Life*, in order to place before Minnesota's farmers, gardeners and others, items of value in suggesting remedial measures at a time when most needed.

The subject of photography is one that has hardly been touched upon by members of this Association in the past. It appears to me that we might well have some co-operative work in this line by those of us who are interested, the aim of such work being directed toward

the production of the best forms of illustrations, both photos and drawings, as well as cuts and colored plates.

9. The Relation of the Economic Entomologist to the Public Press:

There is no question but that we owe much to our daily and county papers. I know of no better way to get widespread information to the farmers of a certain district quickly, and to be sure of reaching all interested individuals, than by placing such information with the editors of our rural papers, and I have no doubt we all find editors willing and ready to help us in this particular. Personally, however, I have found, and probably my experience has been duplicated many times by those present, that the average reporter loves to make a good story, and he will frequently distort what you have to say to him personally, in order to have the information make a good showing in his paper. This practice prevails particularly in our city papers. These erroneous statements are copied largely from our daily papers by the county press, and in that way spread over the entire state, and to other states as well. You have probably all experienced the embarrassment of the results of a chance remark made in the hearing of a reporter. I might cite instances innumerable to illustrate this; one in particular occurs to me, coming to my notice recently in my own district.

One of our field men made the remark before a local reporter in the country, that a certain cricket had been observed eating the eggs of grasshoppers. The reporter at once printed the statement that the common black cricket was destroying grasshoppers, which statement not only circulated freely among the papers in various parts of the state, but I was amazed to receive from Kansas a clipping from a Denver, Colorado, newspaper, saying the state entomologist of Minnesota predicted that the black cricket was eating grasshoppers in such numbers that the pest would soon cease to be a cause of anxiety.

Again, too, apart from the errors of city reporters, which are numerous, and sometimes intentional, we find grotesque mistakes in our country papers. The confounding in Minnesota, for instance, of the Seventeen-year Locust, with true locusts or grasshoppers, has been the cause of laughable items in some of the papers. In August a Minnesota county paper came out in a paragraph with startling headlines, with the following declaration: "WITHIN THE PAST WEEK SEVERAL FARMERS HAVE SEEN THE GENUINE RED-LEGGED SEVENTEEN-YEAR OR ROCKY MOUNTAIN LOCUSTS FLYING HIGH IN THE AIR." Again another newspaper referred to "a visitation of the seventeen-year locust." The entomologist, in a desire to straighten out the matter, sent a

letter, which he deemed fairly lucid, to the editor of the last named paper. In his next issue the editor treated the matter in this way, in big headlines, "No Fear of Grasshoppers. The editor is in receipt of the following letter, which ought to dispose of all predictions and rumors surrounding the pest mentioned." Then follows my letter, which simply referred to the Seventeen-year Locust.

What can we do to make the country papers and our daily press amenable? Personally, I can suggest no remedy, unless it be to give nothing to a reporter unless it is typewritten, and secure from him a promise that if he makes use of the news, it is to be given exactly as stated. Even then, the resulting article is sometimes surprising, to say the least.

The men in my office have been given strict instructions to give nothing to a reporter over the 'phone. We have tried giving such news repeatedly, only to be frequently embarrassed and dismayed at the result. We, therefore, reply to an inquiry over the 'phone by telling the reporter who calls us up, that we will be very glad to give him information if he will come to the office personally.

10. The Relation of the Economic Entomologist to his Fellow-Citizen:

There is a general feeling that a professor must stick to his books and express no opinion upon politics or civic questions of importance. It is to be hoped that no entomologist, wherever situated, will be content with an interest in his special field of work; society calls upon him to be a good citizen, as well as a good "bugman" and he should feel the responsibility of interesting himself in questions of vital interest, and in the social activities of his community, not only for altruistic reasons, but also because in doing so he rounds out his own character, and avoids the narrowness so often met with in specialists.

Our idea of personal service for the public good might well be enlarged to include our social obligations towards our fellow-townsmen, and not limited to the somewhat narrow confines of our specialty.

11. The Relation of the Entomologist to the State Legislature:

Many institutions forbid their employees to frequent the lobby of the legislature, and almost all would frown upon any member of the staff attempting to get an appropriation for any purpose whatever, which did not have the sanction of the Board of Regents. In our own institution the Board, previous to the meeting of the legislature, prepares a budget for presentation, the result of careful deliberation upon the part of the various faculties and the board. This is as it should be, for we must not forget in our ambition and interest in our

own work, that the institution must be a unit, and that we frequently have to sacrifice what seems to be our right for the good of all. There are occasions, however, when an entomologist is privileged, and perhaps, obliged, to fight for a legislative appropriation. This is disagreeable to the highest degree, but seems to be, sometimes, almost a duty, if one has his work at heart.

12. The Relation of the Entomologist to Commercial Interests:

By commercial interests in this connection I refer particularly to those concerned in the manufacture of insecticides or spraying machinery. Manufacturers are quite prone to be overgenerous in donating to entomologists samples of some manufactured article, with a request that it be tested, and a report made upon the results of the test. In our department in Minnesota we avoid absolutely such a relationship, for it is very evident that a favorable report is expected, which will be used later on as an advertisement. Is not this experience practically the same in all stations?

The necessity of avoiding the advertising of anything in our state publications is too evident to be commented upon. In doing this an entomologist at once opens himself to criticism, as you know. It is sometimes, however, difficult to avoid publicly referring to some article which we have found to be, from our standpoint, the best there is for its advertised purpose. Individuals, of course, have to use their judgment as to what attitude they take in such cases.

Under this caption we might also discuss whether an entomologist is in duty bound to serve professionally all citizens and business interests by giving up a considerable amount of his time to any one party. I refer to requests on the part of business houses for treatment of their store rooms or mills or even private houses which are infested with an insect or insects. It would seem that, should he respond freely and without charge to every firm so calling upon him, he would be so crowded with work of a personal nature, and of benefit to only a few individuals, that his regular legitimate work, which is primarily along agricultural lines, would suffer. Here, again, each entomologist has to decide, from the conditions of his own environment, and the conditions surrounding individual cases, as to the position he takes in this connection.

13. The Relation of the Entomologist to the Inspection of Nursery and Foreign Stock:

Many of us have in our charge the inspection of nurseries, and to this inspection has recently been added the work of inspecting foreign stock imported into our various states. This varies in amount and

in importance enormously in various localities, and I presume the nurseryman type is about the same wherever we find it, representing a wide-awake, aggressive body of men, as a rule willing to cheerfully abide by the laws, but frequently resenting any legal interference which seriously affects the pocketbook.

Many nurserymen are orchardists, and realizing that the sale of fruit depends largely upon its freedom from insect blemish, are ready to quickly adopt any method for preventing insect injury which the entomologists have found to be good. Of course, among nurserymen, as among all classes of men, we find the narrow minded, the selfish, the short-sighted, and the poorly educated. That we must expect, and fortunate is the entomologist who is tactful enough, and, at the same time, sincere enough to keep up harmonious relations between his office and all of his constituents in this line of work.

Turning to the subject of inspecting foreign stock, different inspectors would naturally have far different experiences to relate. The difficulty we experience in Minnesota is that so many boxes are examined without finding a single trace of injurious insect, that the importers look upon this inspection as needless and absurd, and frequently chafe at the restraint in the matter of unpacking, which is occasioned by our interpretation of the law. The Minnesota state inspection law makes it a misdemeanor to interfere with the state inspector in the discharge of his duties. This prevents the opening of foreign boxes by nurserymen or florists before the arrival of the inspector or his deputy. I speak, however, as a representative of the state where importation is not so great as in many of the states to the south and east of us. I believe that nurserymen generally are in favor of some uniform law or laws governing inspection in all states.

Conclusion:

The time has arrived and passed for closing this address, and mindful of a long series of "don'ts" for public speakers, which I have carefully studied, "Don't exceed your time limit, don't tell a long story, don't try to be funny, don't fatigue you audience, don't wander from your subject, don't apologize, don't be awkward," etc., I hasten to the end, for I fear I have heard for some time a murmur of impatience throughout the audience, in which I could distinguish these words:

"And still he talked,
And still the wonder grew
That an Entomological President
Should say so little new."

Nevertheless the speaker hopes that you have found something of interest and value in the address. Even if you have not, he feels

that he has done his best, and therefore, makes his bow, retiring with an untroubled conscience, thanking our faithful secretary for his helpful services in connection with the programme of this meeting.

Before stopping, however, I must say a few things which are in my heart to say at this moment. We all join, I know, in the enjoyment of the good-fellowship evidenced on the occasion of these meetings, quite apart from the gain we experience in information as to new facts. And, after all, it is our attitude toward each other, toward our fellowman, that really counts in the long run. Think of many of our present members! Look back into the past also and you will realize how much the personalities we have known meant for us. Let us, therefore, while retaining our high ideals of work and efficiency, entertain a warmth of regard toward each other, which will dull, in a measure, the keen edge of criticism; and let us seek to find the good in our fellowman rather than his weakness. May we not forget that good work, for its own sake, is the best incentive, and further that honesty and generosity are the corner stones underlying altruism. Above all else, remember that courtesy and cultivation, gentleness of manner and refinement of thought are in no way hostile to practical work, and that, although a man may have a high degree, if he has attained that purely by excellence in a special line of work, and has not obtained with it the breadth of culture for which that degree stands, he fails in reflecting the credit upon the institution granting the degree which he otherwise would.

Many of us were fortunate enough to enjoy, in our early training, the helpful association with teachers, not only of scholastic ability, but also markedly sympathetic, gifted with a largeness of mind and heart, which made them, and still makes many of them, a power for good amongst their students and in the community in which they reside. These rare and gifted men will not always be with us. Some of them we have already lost, and as time goes on all will have sooner or later, to retire from the field they have so ably filled. Manifestly it is the duty of all, and particularly the younger entomologists, to carry on that enthusiasm for work, that spirit of generous self-sacrifice which made association with their teachers so helpful and delightful. It is for each succeeding generation of entomologists to keep alive and pass on to their successors this holy fire, kindled by our illustrious predecessors.

VICE-PRESIDENT BALL: The constitution provides that the discussion of the President's address shall go over until the next session, so we will go on with the programme and the President will take the chair.

PRESIDENT F. L. WASHBURN: I note that the time asked for the members who have papers in no case exceeds fifteen minutes. I will, therefore, hold each member to the time which he requested, and which is stated on the programme.

The first paper is by W. C. O'Kane, on "Methods in Photographing Insects."

METHODS IN INSECT PHOTOGRAPHY

By W. C. O'KANE

The writer of this paper wishes to disavow at the outset any claim to expert knowledge of photography. The matter here presented is not offered in that light.

It is suggested, however, that as a group of workers in a specialized field, we have not brought photography to its highest point of possible service to our particular needs. Insect photography, whether to aid scientific study or for purposes of preparing illustrations, is not the same as pictorial or portrait photography. The questions of posing, lighting and details of process are capable of being answered in a particular way for our special purposes.

The writer believes that we may and should acquire a common fund of individual experiences in photographing insects, and that from these will naturally crystallize out a method of procedure that is the best and that will ultimately be of great value to all of us. This paper is offered, therefore, simply as the writer's individual experience, as a contribution toward the above.

Cameras. In our laboratory three cameras are in general use.

In photographing insects or their work at same size, or at enlargements of two or three diameters, or at similar reductions, an apparatus is used ordinarily cataloged as a "Copying and Enlarging Camera." This is a horizontal stand. The bed is eight feet long. At the front of the camera is a platform which is made to rise and fall by means of a long, continuous thread screw, operated by a hand wheel located at the rear of the stand convenient to the operator when focusing. The lens mounting is provided with a large prism which bends the light rays at a right angle. Thus an object is posed on a horizontal platform, but the operator works always at a convenient level, no matter what the bellows extension may be.

The second camera is used for photomicrographic work at enlargements of five to eighteen diameters, especially of small, opaque objects, such as flea beetles, and the like. The stand is home made. The bellows and plateholder were once part of a device for making lantern

slides. On the platform rests an ordinary, compound microscope which happened in this case to be ancient and discarded. The photographic lens is carried at the lower end of the tube of the microscope. This tube was sawed off at the upper end so that the limits of its bore would not interfere with the diverging light rays coming from the lens. Connection is made between the microscope and the camera proper by means of a black cloth tube. The object to be photographed is placed on the stage of the microscope. The advantages of this arrangement are as follows: The mechanical and revolving stage with which the microscope is fitted permits of moving the object delicately and smoothly into the center of the field of vision. The focusing is done by moving the lens tube up and down with the ordinary focusing screw, thus avoiding disarranging or jarring the object. The bellows are previously extended to whatever point is desired in order to obtain the magnification wished for, the stand itself having been marked at the various points at which the plate-holder should rest to give certain magnifications. This method of getting the object into the field and into focus has been found rapid and satisfactory.

The third camera is a regulation 5 x 7 field outfit.

Lenses. With the large camera first described a set of Zeiss Protar lenses are used. There are three compound lenses, the focal depths of which are 13 3-4, 11 3-16 and 8 3-4 inches respectively. Any of these may be used singly, or any two may be used in combination. In the latter case the resulting lenses have much shorter focal depth. The single lenses are used for copying and moderate enlarging. The combination lenses are adapted to field work, where the object is comparatively remote from the lens. Nine times out of ten in photographing an insect or its work at same size or at enlargements of two or three diameters we use the 11 3-16 inch lens, and if one has a separate field camera fitted with its own lens, this size alone will serve all ordinary needs.

With the second camera we use a Bausch and Lomb Micro-Tessar, size 48 mm., made especially for this kind of work. The principal desideratum is a lens so constructed that it will have as much focal depth as possible; that is, one that will bring out sharply the nearest and the farthest parts of an object, even at considerable magnification, as for example the antennae and the feet of a beetle. The ordinary lens will not do this; the regular objective of a microscope least of all. Furthermore, for successful work of this nature the lens must contain within its mounting a diaphragm, by means of which, after focusing, the aperture may be reduced and details brought out that would otherwise be lost.

Our field camera is fitted with a set of Turner-Reich lenses, sizes 18, 12 and 10 inch.

Lighting. All our photographing, except field work, is done by artificial light. The electric arc is doubtless the best all round illumination. It is used by photo-engravers, who are professionals and ought to know. We could not employ it because we have a very low-frequency alternating current. We substituted, therefore, a Nernst lamp of approximately 1000 candlepower, and have found it adaptable and entirely satisfactory. For work with the large camera this light is carried on a stand, four feet high, the top of which is hinged and can be fastened at any angle by means of a casement window adjuster. In front of the lamp is an ordinary three-inch reading glass, which picks up the rays and delivers them on the object in sufficient concentration. By moving the lamp toward the reading glass or away from it, the beam of light may be enlarged or diminished in diameter.

Nernst lamps of this type are provided with four glowers placed close together, which are automatically warmed to the point of conductivity by a heater behind them. We found that when the lamp was tipped forward, this heater soon burned out. Therefore we removed it entirely, and use a small alcohol lamp to warm up the glowers, an operation of half a minute. After the lamp is set going a tin cover is placed over it to shield the operator's eyes. A considerable advantage of the use of this lamp as described, with the simple reading glass to pick up and concentrate the rays, lies in the avoidance of excessive heat on the object being photographed. Some heat is carried through, but not enough to be of consequence. The stand was made by the station carpenter.

Both plain and concave mirrors are used near the object to offset shadows, and to bring strong beams of light to bear, so as to bring out essential parts, as for example to illuminate and make clear the sculpturing on the wings of a beetle. The manipulation of these mirrors is an important feature in obtaining a successful negative. The usual proceeding is to depend on the direct rays coming from the reading glass condenser for general illumination of the object and its background, and on one or two concave mirrors to soften undesirable shadows and accentuate high lights. Considerable experimenting in the placing of these mirrors is often necessary and always desirable. Surprising improvements are effected by slight changes in the direction from which light rays are thrown, or by varying the comparative intensity of two sources of light. Again, some objects will show undesirable reflections with one lighting, which may be eliminated with another. The larger concave mirrors are obtainable at drug or department stores, where they are sold as shaving mirrors. One

of them is 4-1.2 inches in diameter; the other 6.3-4 inches. The smallest concave mirror used was taken from a compound microscope and attached to the end of a mounting designed to carry an ordinary small bullseye condenser.

When used with the photo-micrographic camera the Nernst lamp is mounted on a lower stand, so as to bring it better within the field of action. The general scheme of manipulation, however, is the same. Ordinarily, use is here made of the smallest concave mirror of short focus, giving an extremely concentrated beam of light, and often one of the larger mirrors in addition, to soften shadows.

This camera with the lighting arrangements slightly altered is used for photographing small, semi-translucent objects by transmitted instead of reflected light; such, for example, as aphids or thrips mounted on slides. In this case a ground glass is interposed between the lamp and the mirror beneath the microscope stage.

Posing the Object. When a picture is desired for purposes of illustration the writer believes in the plan of posing a given insect in as life-like a position as possible, wherever this can be managed. This is not with intention of deceiving the lay reader, but because such posing usually gives a better idea of the real appearance of the insect as it is found in nature. If the insect can be posed on a natural background without merging into the background so as to be obscure, so much the better. Thus, larvæ and adults of the potato beetle carefully posed on a half-eaten potato leaf convey a truer idea to the ordinary reader than does a single beetle standing in space with each leg extended with mathematical accuracy.

Often it is quite impossible to use such backgrounds. Plain white, solid black or a neutral gray may then be used. Oftenest a white background is best. To make the proper start toward this, we have made frequent use of a simple piece of plate glass fastened at one end to the top of a common dissecting stand in such way that most of the glass has nothing beneath it. On this glass is placed the object to be photographed, and beneath it a clear white paper or cardboard, far enough away if possible that the shadow of the object will not be included in the negative. If the object is small this may be done successfully. If it is large, it may not. Pinned butterflies and the like may be posed above the plate glass by gluing to the latter a tiny piece of cork into which the pin may be inserted.

For the photomicrographic camera a similar glass stand was made by setting four pins in the corners of a one by two inch block of wood, and cementing on the top of these slender posts a small piece of plate glass.

When it is necessary to photograph larvæ that have been preserved

in alcohol, it will be found advantageous to add 10 or 15% of glycerine to the liquid some hours previously. This will retard evaporation of the preserving fluid from the larva and allow time enough to make a negative before the larva shrinks, which it will do rather too promptly, unless this precaution is taken.

Plates and Developer. In our experience it is nearly always desirable and often essential to use a dry plate adapted especially to catch color values: the kind of plate usually termed ortho- or isochromatic. Many insects have shades of yellows or reds that the ordinary plate will not catch at all, or at least but faintly: for example, the potato beetle, or the twelve-spotted cucumber beetle. With ordinary plates the spots in the latter will appear very dim, while with isochromatic plates they will assume their proper brightness and differentiation, although the lighting and all other conditions remain the same. Color screens we have not used, since the ortho plates have seemed to meet our needs in each case, with our method of lighting. They may be highly desirable. The plates that we have used include the Standard Orthonon, the Seed's Non-Halation Ortho, and the Cramer Isochromatic. Our preference inclines somewhat toward the last. Using this plate in medium speed emulsion, photographing at some size, with the Zeiss Protar 11 3-16 inch lens, stopped down to f/11, and using our regular Nernst light with reinforcing rays from a concave mirror, the length of exposure is one to one and one-half minutes for an object of ordinary color value. The right exposure for the other magnifications may readily be estimated from this.

Preparation for Printing. Most negatives showing an object on a white background will make better prints if the background is "painted out." By this is meant covering the background as it appears in the negative with one of the prepared "opaques," sold for this purpose, leaving only the image of the object itself unpainted. The material is thinned somewhat with water and is applied with a fine brush directly to the film side of the dried negative. The finest and smallest size brush will be needed for working up close to the image, while a larger brush may be used for blocking in the remainder. A convenient touching stand can be made by fastening a piece of glass about 12 x 6 inches square in a simple frame, and supporting this at a moderate incline, so that light will be admitted from beneath. A reading glass of much assistance in tracing the outline of the object. A print from a negative that has been thus painted out will invariably be better and cleaner cut, even though the original background appeared fairly dense in the negative. Where extraneous objects show in the negative this process of elimination is doubly valuable.

Prints for Half-Tones. Most prints today that are not intended

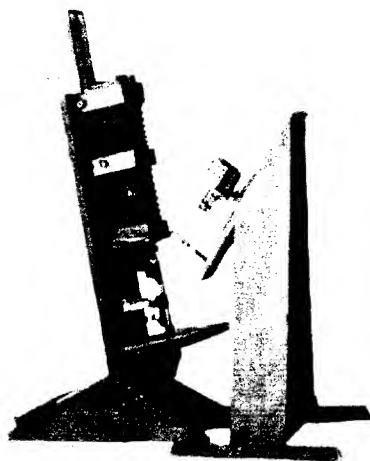


Fig. 1.

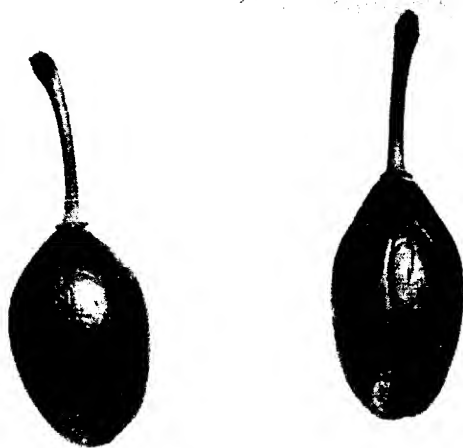


Fig. 2.

Fig. 1. Camera used for photomicrographic work.

Fig. 2. One-half of the background has been painted out with opaque; note the contrast.

especially for half-tone reproduction are made on a developing paper, such as Velox or Azo. Ever since these papers were first introduced the claim has been made that they are inferior for half-tone reproduction to the older process of printing-out papers, such as Solio. To test the matter, the writer selected a lot of negatives and made a duplicate set of prints, one set on Velox and one on Solio. These were submitted to the head photographer of a large engraving establishment, who was invited to select the print in each case that would make the best half-tone. In most cases the man declared that there was no reasonable preference. A few were decided in favor of the Solio, and some in favor of the Velox. The matter seemed to resolve itself thus. The developing papers have been improved since they were first devised until for many negatives they quite equal the printing-out papers. Their management is so easy and speedy that one does not hesitate to make additional prints from a given negative when the first one seems at all capable of any improvement, and thus a good set of prints is apt to be secured. The printing-out paper, on the other hand, will hold more detail in the very thin and the very dense portions of a negative than can be held with the developing paper.

Unless, however, the half-tone is to be of fine screen, and printed on good paper, the minute additional detail will likely be lost; and in that event the well-executed Velox print may give a better effect than the Solio.

In the case of any print showing an insect at magnifications of three or more diameters, the writer thoroughly believes in the scheme of making a small print showing the insect's natural size, and placing this adjacent to the enlargement. It conveys a better idea of the true appearance of the actual insect than any hair-line can do, and is vastly better than dependence on a legend beneath saying "greatly enlarged" or "x 5."

PRESIDENT F. L. WASHBURN: Any discussion on this paper?

W. H. GOODWIN: As an introduction I will say that I have been experimenting with photomicrographic work for four years and have done considerable photographic work for almost fifteen years. I would like to add a few points to Mr. O'Kane's paper on photographing insects.

In photography, especially when using the ordinary plates, blue in every case photographs much lighter in color than it appears to the eye, while the reds in a photograph appear as black and much darker than one would expect. Isochromatic or preferably orthochromatic plates have dyes incorporated in the emulsion which make them less

sensitive to the blues, and more sensitive to the other colors of the spectrum. They do not show more than half of their color value, however, until the ray filter of greenish yellow color is placed on the lens. It prevents many of the blue rays of light from reaching the orthochromatic plate and allows the other colors to be registered more nearly as they appear to the eye. Some stunts in photography may be performed by the selection and use of proper filters and plates; red can be photographed so it appears as white, blue as black, and green, yellow and brown may be readily differentiated.

By selecting the proper filter, the colors which ordinarily give no great amount of difference in monochrome on the ordinary plate become widely different in appearance when a spectrum or orthochromatic plate is used in place of the ordinary plate. There are a number of makes of color filters on the market; the most complete set, which is inexpensive, is made by The G. Cramer Dry Plate Company. With regard to photo dry plates I have finally settled on five or six different kinds of the Seed brand, because they give much clearer and snappier negatives than any of the many other makes I have used. Some of the others apparently give slightly better color differentiation but they also have faults which more than overbalance their good qualities. There are many things to be considered, especially little details which are ordinarily overlooked.

The difference in the distance of the plate and ground glass screen from the lens, often gives indistinct out-of-focus negatives; coarse ground-glass or lack of care in focusing; the use of large stops when small ones should be used; incorrect exposure; or overdeveloped negatives and many other things must all be considered. Extremely fast lenses often prove undesirable, because of their lack of depth of focus. Theoretically lenses of the same focal length, but of different speed, when stopped down to the same aperture, should have the same depth; but in practice the speed lens fails.

With regard to prisms for photographic use, I have been advised by expert engravers and lens makers, not to use a prism, because even in the best prisms, there is always a certain amount of aberration which cannot be eliminated and it often makes part of the image appear indistinct. This defect occurs in prisms costing as much as \$1800, and in using the cheaper kinds, many slightly indistinct photographs are the result. When the plates vary considerably in thickness the same trouble will be experienced. The use of impure chemicals or solutions will also give the worker all kinds of trouble.

* I use pyro for developing plates as it is a flexible developer which gives negatives with excellent detail, without any of the dense, harsh contrast effects which always attend the use of hydrochinon. Acetone

aliphite may be used to advantage in place of potassium bromide with some makes of photographic plates, if one desires especially contrasty results without the loss of fairly good detail. If this is used with care the results obtained will be similar, although the temperature of the developing solutions may be varied considerably and any one who has over developed photographic plates in warm weather will appreciate it as a preventive of chemical fog.

I have used a single arc light, with condensers, for illuminating subjects on dark days. It is one of the very best sources for artificial lighting when properly diffused and controlled. I find, too, that the ground glass on a micrograph camera, must be ground very fine and more luminous images are obtained if it is coated with a very thin film of vaseline on the ground side. The advantage of this becomes apparent when using the magnifier to assist in focusing.

Backgrounds are seldom satisfactory, and, after much experimenting with more than thirty different colors, or shades of colors, I found that neutral gray gave the best results in most cases. Black or white may be used under plate glass, but with black, undesirable reflections are often encountered in the negative. White or opal glass is often much superior to white paper for a background and does away with unpleasant shadows.

I would like to pass around for the inspection of Association members some illustrations of insects in natural colors; these photos are produced by a method entirely different from the usual one. I want you to observe the richness and the truthful rendition of the colors obtained by this process. This is the work of our Station Photographer Mr. William P. Beeching, Jr., and is a secret method, which he has not seen fit to divulge. I think he is wise in not doing so, especially as the process is not patented.

PRESIDENT F. L. WASHBURN: Any further remarks on this paper? The next paper on the programme is by S. J. Hunter, on "Pellagra and the Sand-Fly."

THE SAND-FLY AND PELLAGRA

(Abstract)

S. J. HUNTER, *University of Kansas*

For more than two hundred years the etiology of the human disease, Pellagra, has been a subject of serious inquiry. Briefly, it may be said that the causation of Pellagra is purely conjectural. The

¹The complete paper is in the *Journal of American Medical Association*, Feb. 24.

solution of this problem has at various times been proclaimed, but subsequent investigations have failed to furnish corroborative material.

Three theories have been advanced as to the cause of this disease: the Zei-toxic theory based upon the work of Ballardini in 1845 giving corn poison due to the excessive use of corn products as the cause, supplanting the old theory of faulty metabolism; the cotton seed products poison theory of Mizell in 1911; and the sand-fly theory of Sambon, 1910. The first two rest on malnutrition, the last on the action of a parasite.

Our investigations began with the diagnosis of the first authentic case in Kansas and have had the co-operation of the attending physician, Dr. E. E. Liggett and Dean Crumbine of the School of Medicine and Secretary of the State Board of Health.

Eight cases have been found and in the vicinity of each, save one, the sand-fly was found to exist. The locality of the exception has not been surveyed. This patient, however, spent year before last in the south where sand-flies are abundant.

The lines of investigation which the writer determined to follow were transfusions on guinea-pigs and monkeys and transference of flies, exposed to Pellagrins, to monkeys and guinea-pigs. In the experiments with each exposed animal there was a check or an unexposed animal. The transfusions and inoculations gave no positive results. Temperatures of the guinea-pigs and monkeys were taken twice a day without showing any appreciable change.

The Sambon Theory is protozoal and from analogy with the etiology of malaria, the parasite of Pellagra in all probability would have to pass one stage in the body of its intermediate sand-fly host before it could resume its life in the human body. This hypothesis being true, transfusions obviously would be without results.

The only species found is *Simulium vittatum*. The patient used in the experimental work was a mother, thirty-five years of age, in the second season of the disease.

In all 1282 live sand-flies were used and this phase of the work extended from the 21st of August to the 4th of November. The plan was to divide the number of flies intended for each experiment into two lots, the one lot to be exposed to the Pellagrin and then to the subject of experimentation and the other exposed to the check.

Ten guinea-pigs and two monkeys were used and the temperatures of all were taken morning and evening daily. The number of live flies exposed to the Pellagrin and then to the monkeys was 197. A part of those exposed to the Pellagrin were reserved for fixation and sectional microscopic examination in the laboratory now during the

later period. Since the females, only, bite, the relative number of the sexes is important. In a count of 488 specimens 219 or 42% were females.

Earlier in the season the flies did not seem to bite the patient but beginning with October 12th they attacked her, biting freely, drawing blood perceptibly from her arm. These flies were then divided, part placed in the fly proof cage with the male monkey; part with the guinea-pigs. Repetitions of the same experiment were made almost daily during the stated period.

On November 7th the male monkey became inactive, then flaccid and motionless save for a high rate of respiration at times. He grew no better, was finally chloroformed and autopsied, and his cellular pathology is now being studied.

It is our purpose to use a larger series of experiments dealing especially with *Rhesus* monkeys in greater numbers, in continued endeavor to ascertain the validity of the Sambon parasitic theory of Pellagra. When once the susceptibility of the animals under experimentation is determined, it would seem that evidence for or against the theory ought to accrue.

PRESIDENT F. L. WASHBURN: Any discussion of this paper? Mr. Hunter, you state that in the report of Sambon he credited *reptans* with being the cause of trouble in Europe, and you also state it is only reported from the northern part of North America. How, therefore, would you account, according to his theory, for cases in our Southern States?

S. J. HUNTER: Mr. President, the other species, both biting, might carry it.

MISS MITCHELL: Mr. President, in the first place, how do you account for the sporadic case which arises where no other pellagrin has been? Do the flies come from long distances?

S. J. HUNTER: One of the theories is that they are very short winged insects. In fact, one experimenter has shown that pellagrins are within so many feet of the water. He has gone so far as that.

MISS MITCHELL: Then how do you account for cases in such cities as in Baltimore? Flies don't come in the city and bite. There are cases in Baltimore which originated there, and cases in New York city which originated there, and, so far as we know, the individuals have never been out of the city.

S. J. HUNTER: Then that is a very strong point against the Sambon theory, because that is one of Sambon's tenets, that it never attacks city workers.

MISS MITCHELL: Regarding the sand-fly occurrence in cities, I can remember a good many cases of sand-fly annoyance in this city, away from any apparent source where they might breed. There have been several notes published on that in the proceedings of the Entomological Society of Washington.

PRESIDENT F. L. WASHBURN: Do you have pellagra here in this city?

MISS MITCHELL: There were no endemic cases. Three have been brought in from outside.

Adjournment.

(To be continued)

Proceedings of the Tenth Annual Meeting of the American Association of Official Horti- cultural Inspectors

The Tenth Annual Meeting of the American Association of Official Horticultural Inspectors was held at Washington, December 28th, 29th, 1911.

For convenience, the business transacted at the meeting will be reported first, which will be followed by the papers and discussions.

PART I

The first session was held in the Cabinet Room, New Willard Hotel, Thursday evening, December 28th. The meeting was called to order at 8 p. m., by President Franklin Sherman, Jr., with T. B. Symons, Secretary. Among the inspectors present were:

E. W. Mendenhall, Columbus, Ohio, H. A. Surface, Harrisburg, Pa., L. M. Peck, Manhattan, Kansas, T. J. Headlee, Manhattan, Kansas, S. J. Hunter, University of Kansas, A. F. Conradi, Clemson College, S. C., E. Lee Worsham, Atlanta, Ga., F. L. Washburn, Minneapolis, Minn., J. G. Sanders, Madison, Wis., E. W. Berger, Gainesville, Fla., G. M. Bentley, Knoxville, Tenn., Z. P. Metcalf, Raleigh, N. C., W. C. O'Kane, New Hampshire, H. T. Fernald, Amherst, Mass., B. H. Wadley, New Haven, Conn., W. E. Runsey, Morgantown, W. Va., E. N. Cory, College Park, Md., O. G. Babeock, College Park, Md., J. B. S. Norton, College Park, Md. and T. B. Symons, College Park, Md.

The visitors present were:

A. C. Morgan, Bureau of Entomology, Washington, D. C., E. R. Sasser, Bureau of Entomology, Washington, D. C., G. A. Runner, Bureau of Entomology, Washington, D. C., W. A. Hooker, Office Exp. Station, Washington, D. C., James F. Zimmerman, Bureau of Entomology, Wash., D. C., A. P. Morse, Wellesley, Mass., W. B. Wood, Bureau of Entomology, Wash., D. C., D. J. Caffrey, New Haven, Conn., O. C. Part-

Amherst, Mass., W. S. Regan, Amherst, Mass., Leonard S. McLaine, Amherst, Mass., D. M. Rogers, Boston, Mass., L. H. Worthley, Boston, Mass., E. D. Ball, Logan, Utah, H. P. Wood, Dallas, Texas, W. S. Fisher, Harrisburg, Pa., H. B. Kirk, Harrisburg, Pa., William Firor, Athens, Ga., Fred E. Brooks, French Creek, W. Va., A. Burgess, Melrose Highlands, Mass., P. J. Parrott, Geneva, N. Y., F. C. Stewart, Geneva, N. Y., E. P. Felt, Albany, N. Y., E. D. Sanderson, W. Va., H. C. Severn, N. Y., C. L. Marlatt, Dept. of Agriculture, Wash., D. C., Dr. Perley Spaulding, Dept. of Agriculture, Wash., D. C., Dr. Haven Metcalf, Dept. of Agriculture, Wash., D. C., H. Cox, Wash., D. C., M. J. Elrod, Missoula, Mont., E. Blakerlee, Wash., D. C., W. J. Price, Blacksburg, Va., W. Dwight Pierce, Bureau Entomology, Dallas, Texas, J. B. Gahan, College Park, Md.

The Secretary submitted his report showing the progress of the Association during the past year under the Constitution and By-Laws adopted at the last annual meeting. He reported that the inspectors of twenty-nine states had joined the Association. As Treasurer, he reported a balance of \$16.27 in the treasury.

STATEMENT

J. B. Symonds, in Account with American Association of Official H. Inspectors		
By receipts from members.....		\$73.00
March 2, To Hope Willis, stenographic report.....	\$25.00	
March 2, To Thomas & Evans, programs last meeting.....	7.55	
April 5th, Public Printer, House reports.....	9.48	
Dec. 20th, W. H. Holliday, printing programs.....	2.50	
Printing separates U. S. Agr. Committee's report.....	9.50	
Bill for stamps.....	2.50	56.53
Balance for year.....		\$16.27

The Report was accepted.

The Report of the Committee on National Legislation followed:

REPORT OF COMMITTEE ON NATIONAL LEGISLATION

Mr. Chairman and Members of the Association:

Since the submission of the Report of this Committee citing a brief history of the effort to secure this legislature, and the present status of same before the Association of Economic Entomologists yesterday, your Committee has held several conferences with representatives of the National Nurseryman's and Western Nurseryman's Associations, and U. S. Department of Agriculture, and are now pleased to report in agreement by all parties on the Bill now before Congress, with the following amendments:—

1. That it be stated in the Bill that same be enforced by a Board of five members to be chosen by the Secretary of Agriculture from the Bureau of Entomology, Plant Industry and Legal Department.

2. That it be stated in Bill that a hearing be given parties interested before quarantine be established, and that the issuing of a permit be made mandatory after the rules and regulations are complied with.

3. That the word "general" be added before the word "nature" in line four, Sec. 3, of Secretary's circular, giving copy of law.

4. That the word "imported" be added after the word "any" in line five, Sec. 4, and the word "original" or its equivalent be added in same section before the word "case."

5. That "new to the United States" or its equivalent, referring to pests not generally established in the United States, be added after the word "insect," in line 3, Sec. 6.

6. That same addition as in No. 5, be added after the word "infestation," in line 4, Sec. 7.

The understanding of the agreement was that the meaning of the above amendments be carried out in proper legal terms, a copy of new Bill with amendments to be submitted to all parties as soon as possible.

Your Committee recommends that this Association endorse the Bill as amended, and that individual members do all in their power to aid in securing its passage by the present Congress.

Respectfully submitted,

T. B. SYMONS,
E. L. WORSHAM,
E. D. SANDERSON,
Committee.

It was moved and seconded that the Report of the Committee be accepted and endorsed by the Association.

The report of the Committee was adopted. (The bill as amended has been introduced as H. R. 18000.—Ed.)

President Sherman called upon representatives of the nurserymen present for a few remarks. They spoke as follows:

MR. WILLIAM PITKIN, Rochester, N. Y.

Mr. President and Gentlemen:

I appreciate the opportunity that you offer me in representing the nurserymen, to speak here to-night, although I do not know that I can say very much after the exhaustive report made by Mr. Symons, which I think very well covers the conference we had late this afternoon.

Personally, and as representing the nursery interests, I am very glad to be able to arrive at some basis that will be mutually satisfactory to all interests concerned in this matter. We have had no quarrel with the members of this Association, collectively or individually. We have had some little discussion back and forth between my friend Mr. Symons and myself and others,—but we have differed in our opinion,—and I believe an honest difference of opinion on both sides. I certainly credit him with an honest opinion and I hope he extends me the same credit. We have agreed, I think, pretty well all the way through and the principle of this matter is that the nurserymen

fire protection and certainly have been as much interested and are directly benefited by protection more than any other branch of business or any other body that would be affected by this legislation. As stated, I am glad we have been able to get together and formulate some basis which would be satisfactory all around, and I hope that the proposition as presented by Mr. Symons will secure the approval of this Association, of the Department of Agriculture and of Congress, and I believe the other members of the Nurserymen's Committee who are not here will agree with those of us who are here, and have taken this action, and will feel that this Bill should be supported. Certainly those of us who are here will do all we can to secure the active support of the other members of the Committee, and to get this Bill through and this long disputed question settled and out of the way. I think that as far as I can see, that the Bill as outlined will afford protection to the general public, and the public is entitled to protection and should have it. I think it will be a basis under which the nurserymen can do business and do it safely, and without undue risk, and that is all that we want.

I think that the law can be administered so that it will not be any hardship to anyone, and that is all that we want, and I will be very glad to do all that I can to help along the good cause.

MR. W. P. STARK, Louisiana, Mo.

Mr. Chairman and Gentlemen:

I want to say Amen to what Mr. Pitkin has said.

It makes me very happy to see you gentlemen all smiling and happy. We feel the same way. A year or so ago we were having a little scrap by the way with Professor Marlatt, but I think he is just as happy as any of the rest of us right now.

At the St. Louis Convention, in my recommendations there, I advised and worked for something of this kind, and I feel that your work and our work will be crowned with success, and I am very sanguine that this Bill, as mutually agreed upon, will soon be on the Statute Books, and I am sure that there is no class of men with whom you labor, who are in heartier sympathy with your work and appreciate it more than do we nurserymen. The fact is we could not get along without you.

I want to pledge my support personally and officially to co-operate with you gentlemen to get this Bill on the Statute Books, and I think it was you, Sir, who suggested that the man from Missouri could be a help. I am sure, Sir, that he will be a help. He is an ardent nurseryman and if you will pardon my personal pride, I want to say that in Missouri we expect to see him President. Thank you.

W. H. WYMAN, North Abington, Mass.

Mr. President, and Gentlemen of the Association:

It gives me great pleasure to be here this evening and to look at your honest faces. I can say from my experience with the gentlemen of your Association, and there are quite a number of them here to-night, that I have come to respect very profoundly the honest efforts put forth by the gentlemen of your Association. I have been extremely interested in this work of securing national legislation along the lines suggested by the Bill, as brought to your attention to-night.

I have believed all the way along that when we got together and looked each other in the face, and got each other's ideas, we should not be far apart. Did you ever realize or stop to think that the great trouble with the races is very largely due to the fact that they do not understand each other? If we had one common language with the races, the wars would be practically no more. When we get together and understand each other's position, then we can arrive at conclusions, such as we have arrived at here this afternoon and this evening.

I feel very sanguine that the nurserymen of America will stand by this Bill and do everything in their power to support it and to secure its passage at the coming session. I cannot add any word to what has already been said.

I wish to add this word of appreciation of the work that is being done by the Department of Agriculture along many lines,—not only along the lines we are having to contend with in Massachusetts, but many others, and we want to sympathize with you in all your efforts and to thank you for what you are doing not only for the nurserymen, but behind the nurserymen, the great public, which we are always endeavoring to serve. First and foremost, we must think of the people at large, the general public, and in the law that is to be recommended to Congress by your body, I believe we are serving the interests of all.

It was moved and carried that a vote of thanks be extended the visiting nurserymen.

The Committee on Affiliation was continued and requested to submit a report at the next meeting. The members of this Committee are T. B. Symons, E. D. Sanderson and S. A. Forbes.

Upon motion by Mr. Headlee and seconded by Professor Surface, and carried, the President was authorized to appoint a Committee to consult with chiefs of the U. S. Bureau of Entomology and Plant Industry, and with the Postmaster General, with a view of securing his co-operation in preventing miscellaneous plants and trees

being carried through the U. S. Mail Service without due inspection and certification. President Headlee has appointed H. A. Surface, J. D. Sanderson and G. G. Atwood on this Committee.

REPORT OF AUDITING COMMITTEE

Mr. Chairman:

Your Committee reports that it has examined the books and vouchers of the Treasurer and found them correct.

(Signed) H. T. FERNALD,
E. L. WASHBURN,
Committee.

REPORT OF COMMITTEE ON RESOLUTIONS

Mr. President and Gentlemen:

Your Committee on resolutions herewith presents its report.

1. Resolved that this association extends its thanks to the legislative committee for its efforts in urging the passage of an efficient national inspection law.

2. Resolved that this body hereby urges its members individually to work up sentiment in their respective States in favor of the speedy passage of the federal inspection bill just endorsed by this association, and by the representation of the national and western association of Nurserymen.

3. Resolved that it is the sense of this organization that every effort be made by inspectors to improve and perfect the inspection service in their respective States.

4. Resolved that this association hereby urges the practice of employing inspectors who are adequately trained in plant pathology as well as entomology, or in some other way securing the services of the plant pathologist for the inspection work.

5. Resolved that this society express its regret that among its most useful members, John B. Smith, is now too ill to attend its sessions, extend its sympathy to him at his affliction, and hope for his speedy and complete recovery.

6. Resolved that this body extend its thanks to its officers for the excellent program and arrangements, and to the Department of Agriculture and National Museum for use of facilities.

Respectfully,

T. J. HEADLEE,
J. G. SANDERSON,
E. L. WASHBURN,
Committee.

REPORT OF COMMITTEE ON NOMINATIONS

Mr. President and Members:

The Committee on Nominations submits the following report:

For President, Dr. T. J. HEADLEE of Kansas.

" Vice President, Prof. H. GARMAN of Kentucky.

" Secretary-Treasurer, Prof. T. B. SYMONS, College Park, Md.

For additional members of Executive Committee, Dr. J. B. SMITH, G. G. ATWOOD, N. Y., and Prof. A. J. COOK, Cal.

Respectfully submitted,

H. A. SURFACE,
H. E. SUMMERS,
S. A. FORBES,
Committee.

By motion the Secretary was authorized to cast the ballot for the election of the members nominated. The ballot was cast and the members nominated were elected.

The President announced the following names as members of the Legislative Committee:-

Mr. T. B. Symons, F. L. Worsham, H. A. Surface.

This concluded the business transacted at the meeting.

PART II

The Secretary was asked to take the chair, while the President delivered an address, as follows:-

PRESIDENT'S ADDRESS

FRANKLIN SHERMAN, Jr., *Raleigh, N. C.*

At the last meeting of this Association, held in Minneapolis, you did me the honor (in my absence you will observe) to elect me as President of this Association for the present term,—and as such it falls to my lot to open this session with some remarks. But I cannot claim for these few rambling thoughts the dignity of a Presidential address. In our previous meetings the general matters of policy in our horticultural inspection work have been gone over time and again until I almost despair of bringing to your attention anything new or even interesting. I shall try not to see how many subjects I can suggest, but how few,—depending on the meeting itself to develop others.

Matters of importance will come before us in the reports of the Committee on National Legislation and the other standing Committees, and the discussion of the papers, and the Questions for Discussion should, as heretofore, be matters of keen interest.

There can be no doubt that one of the matters of chief interest and concern to most of us in the east at least, is the inspection of incoming stock from foreign countries for Gipsy and Brown-tail Moths. Yet, surely all of us have had the experience of making costly

and inconvenient trips to make an inspection which was really quite useless. In this manner we spend much money and time that really gives no tangible return. How far should we go in these inspections? Should we inspect everything that comes to a nurseryman from abroad? In North Carolina bulbs, herbaceous plants and conifers are the classes of stock most frequently brought in and I must confess that to inspect these sometimes seems like a waste of time and funds. May we not decide among ourselves what is worth while to inspect and what not? Let us not forget, however, that if a state relaxes and should happen to be the first to become infested it would look bad, even if the infestation were in no wise due to the relaxation. The official who inspects *everything* can with more justice say that he has left no stone unturned.

To what extent need we concern ourselves about fraudulent practices among nurserymen? Is it, or is it not, our business to indicate the size of the nursery and the character of its stock? We all know of cases where a man with only a small area of poorly cultivated stock will advertise through the press or his agents that he has a larger nursery, and a larger quantity and better quality of stock than we are able to locate in our inspections. Is this our affair or not? I put this question impartially to the attorney of our State Department of Agriculture and he told me that our duties had nothing to do with it, that our duty only concerned the condition of the stock as regards insects and diseases. I should like to know the practice in other states, and in those cases where the inspectors do concern themselves in matters of this kind it might be of interest to know whether the laws demand it, or whether this duty is voluntarily assumed. We cannot doubt that openness in this matter is in the interest of honesty, so there is no thought of criticism in this suggestion. If there is a real moral obligation resting on us to make these matters public we should at least know whether our laws require it or not. Is it the business of anybody else to guard the public in matters of this kind, or is it a matter in which no one has a specific duty and which must be left to take care of itself?

I must admit that I feel that there is a tendency to make our inspection systems top-heavy with a multiplicity of laws, rules, regulations, etc. I fear that in our zeal to cover every conceivable point of weakness we are liable to fritter away our energies and time on details which are after all, not essential, and especially is this so when such a mass of routine detail is undertaken by those of us who have limited funds and limited assistance.

Is it well for us even to pretend to guarantee that the purchaser shall receive trees that are wholly free from scale, crown gall, etc.?

The nearer we can come to it the better, and the purchaser who pays a first-class price is justly entitled to receive trees which are not infested; but when our certificates so explicitly state that "the evidence of San José Scale, etc., is found," is not the customer (if he really gives any attention to the certificate at all) led to believe that the state has guaranteed this stock, and that he need not worry about these trees? Is it entirely best either for ourselves or our fruit-growers, to encourage them in the belief that "this nursery has been examined and there is no scale or other trouble in it, therefore this young orchard which I am setting out is making a clean start?"

Even though we adhere to the old system of certificates (and I am not sure that there is any better) we should certainly hammer it into the minds of our constituents that our systems are not perfect, and let them know that it is their business to watch the trees carefully after they are put out; that no system of state inspection can take the place of watchfulness on their part, and that no matter what help the state may give or try to give, it is self-help upon which each should be prepared to rely.

But our Association is not concerned merely with the inspection of young stock in nurseries—the work of inspecting growing or bearing trees in the orchard also claims our attention, and as we are all pretty well settled in our habits or determined in our minds regarding the inspection of *nurseries*, I think that we might profitably discuss in some detail the methods and results of *orchard* inspections. Here, as in nursery inspection, we shall find the *extent* of work varying with the amount of money and force of inspectors available, but if we can compare the methods followed, the pests sought for, the methods of following up the inspections by advice, letters, etc., we can surely reap great benefit.

Surely we are all glad to see the variety of papers on the present programme, and especially those which will instruct us regarding some of the recently introduced pests or ones liable to be introduced into the United States or Canada. And let me hasten to say that this good programme is not in any degree attributable to your President—I think that our active and efficient Secretary must be the one responsible for this treat.

The appearance of these papers on recent introductions or pest-liaible to be introduced suggests this thought: would it be in order for us to request or suggest that the U. S. Department of Agriculture prepare a Bulletin in which all these new or threatening pests (whether disease or insect) be figured, and that the stages to be sought for by nursery inspectors be shown so far as possible in natural colors in their natural location on the plants concerned? Such a publication might

is exceedingly useful both to nurserymen and inspectors, and would certainly help to put these two parties into more sympathetic relations in the search for their common enemies.

Alas! after having drawn up an outline of what I had to say, a copy of the programme reached me which showed that practically all of my thoughts and queries were already provided for, and many more besides. We will, therefore, do well to proceed with the business of the Association at this, its Tenth Annual Meeting, which will, let us hope, be one of great pleasure and profit.

SOME RECENT NEW IMPORTATIONS

By C. L. MARLATT, *Bureau of Entomology, U. S. Department of Agriculture*

It is not necessary nor is it possible to report fully on importations of new pests during the last few years. To emphasize the need of protection at the earliest possible moment, a few recent records, or recent destructive work of older importations, may be noted.

CONDITION OF IMPORTED NURSERY STOCK, 1910-1911

Fewer brown-tail moth nests were received on imported stock during the season just ended (1910-1911), largely owing to the agitation in this country and the more strict supervision by foreign governments, and doubtless particularly to the natural fluctuation in the numbers of this pest abroad. These nests are, however, still coming in, some 100 nests being reported as received in New York State and 2 in Ohio. Reports have not been received from other states. The danger from this condition is perhaps even greater than when the nests are coming in more abundantly. The infrequent finding of these nests will naturally lead to a laxity of examination and result in an even greater risk of infested material being passed.

The Department's connection with the work is the same as before. The voluntary reports received from the customs officers and the railroad companies have been transmitted to inspection officials of the several states. These reports are by no means complete, and can not be complete under existing conditions.

The inspection notices sent to the Bureau of Entomology by the customs officials of the various ports of entry for the last fiscal year (July 1, 1910, to June 30, 1911) indicate over 6,000 different shipments and some 90,000 separate parcels. This, however, includes bulbs, orchids, and greenhouse stock, as well as nursery stock proper. The

total annual value of all plant importations in recent years has been a little over two million dollars, and the latest customs statistics available indicate that less than one fourth of this relates to nursery stock, namely, trees, shrubs, and ornamentals, including seedlings. Roughly, therefore, one fourth of the total number of shipments should be subject to careful examination. The standard trade in greenhouse materials and bulbs is subject to comparatively little risk of introducing new dangerous pests.

One of the worst features of the situation is the importation by department and five-and-ten-cent stores of foreign ornamental nursery stock, which very often is not reported, and which state inspectors have the greatest difficulty in tracing. Nursery stock from abroad is also sent to this country to be sold under the hammer at various auctioneer establishments in large cities, and in both of these cases it is almost impossible to trace such stock or make any adequate inspection of it. In this city, such stock has been examined by agents of this Bureau under difficulty and without any real authority, and has in several instances been found infested with dangerous insects.

FOREIGN IMPORTATIONS INTO THE DISTRICT OF COLUMBIA

The conditions of commercial importations consigned to Washington either direct or in bond, and the current inspection work of the Bureau of Entomology relating to fruits, seeds, and plants imported by the Department of Agriculture, may be interesting as illustrating more pointedly the dangers which are common to the whole country.

Customs advices relating to 63 commercial importations to the District of Columbia have been received this year, and so far as possible these plants have been inspected. There is, however, no law for the District of Columbia which authorizes such inspection, and any examination made must necessarily be by the courtesy of the importers. This has sometimes been refused or is often grudgingly given, and at best has been without any special effort on the part of the importers to facilitate or promote thorough inspection. The worst feature of such imported stock is the masses of cheap ornamentals which are brought in and sold by department stores or under the hammer by auctioneers; and this condition applies to most of the other large cities of this country. In one instance of the present year an auction firm was courteous enough to allow the Department to destroy a large quantity of young spruce trees imported from Holland and which were badly infested with the spruce aphid, *Lachnus juniperi* Fab., an insect not known to occur in the United States.

PLANT IMPORTATIONS BY THE U. S. DEPARTMENT OF AGRICULTURE

In the case of the importations of new stock, plants, or seeds by the Department of Agriculture, all such material coming to Washington is thoroughly inspected by officers of this Bureau, and if need be, disinfected or destroyed. Furthermore, all the lots of material which the Department prepares for distribution are again inspected and, if necessary, fumigated before being sent out. In this way, 750 different shipping orders have been inspected for the Bureau of Plant Industry, and many of these lots have been fumigated.

In the case of the importations by the Department of Agriculture this double inspection and fumigation, with usually a considerable period under quarantine, is believed to safeguard such material and to reduce to a minimum the likelihood of the introduction of new insect pests. As illustrating what may be brought in by such material and which in the case of private importers must often escape detection, it may be noted that more than 20 different pests have been intercepted on the importations by this Department, many of these new to this country, and with very unpleasant possibilities. These include such things as weevils infesting seeds, grasshoppers with wild grasses, grain insects, the mango seed weevil, a moth reared from mango seeds, scale insects, aleyrodid species (insects related to the white fly), a peach seed weevil from Siberia, *Anthonomus druparium*, already a very injurious pest in Europe, and if introduced into this country will probably be even more destructive than the plum curculio; a cecidomyiid (related to the Hessian fly) on Lotus introduced as a fodder plant; several scale insects; eggs of a leafhopper in cuttings of persimmon and peach from China. The latter, judging from its relationship to known pests, is capable of very great destruction to all sorts of orchard and ornamental trees. The eggs in this case are inserted under the bark, and to the ordinary observer would pass absolutely unnoticed.

The record of importations of new pests given above is the best possible argument for the passage of a national plant quarantine and inspection law.

RECENTLY ESTABLISHED PESTS

Perhaps the most destructive comparatively new insect pest is the alfalfa leaf weevil, which has already caused tremendous damage in Utah,* and threatens to extend throughout the great alfalfa growing region of the middle West. It was evidently brought to this country from Europe on some imported goods, not improbably with the packing of nursery stock.

Dr. J. B. Smith, of New Jersey, has called attention in his recent report (1910), p. 344, to the discovery of the European red tail (*D. chiriaca padibunda* L.) in New Jersey. The caterpillar of this moth, capable of being a very troublesome pest, and is somewhat related to the tussock moth. In Europe it is a general feeder and on the authority of Doctor Smith frequently entirely defoliates forest areas, and there recognized as a first class pest, ranking with the gipsy and brow-tail moths. Its life habits are such that it is easily transported with nursery stock, and one of Doctor Smith's inspectors, in fact, found a cocoon from which an adult was bred, in stock imported from France during the winter of 1909-1910.

Mr. J. W. Chapman, of the entomological laboratory of the Bussey Institution, at Harvard University, has reported on the occurrence of the European smaller elm bark beetle (*Scolytus multistriatus*) infesting in very large numbers the old historic elms of Cambridge, Mass. This insect works in company with the wood leopard moth and the two together have fairly well destroyed the magnificent elm in and surrounding the campus at Harvard University. The writer this summer, witnessed the uprooting of the enormous moribund, dead trunks, of these famous old trees, the cost merely of the removal of which was about \$30 per tree. Similar injury, charged to the leopard moth only, is reported by Britton and Cormie for the coast region of Connecticut. [Bul. 169 (1911), Agr. Exp. Sta.] There seems to be no reason to doubt that this *Scolytus* is firmly established and it looks very much as though these two insects together would in the end almost as disastrous to elm in this country as the chestnut disease has been to the chestnut in the forests and parks of New York and adjacent states.

What bids fair to become a very important apple pest is the apple seed chalcis (*Syntomaspis druparum* Boh.), which has been made the subject of special study by Mr. C. R. Crosby, of the Entomological Department of Cornell Experiment Station (Bul. 265, April, 1909). This insect passes the winter in the larval stage in the apple seeds and can be very easily distributed by apples or apple seeds to all parts of the country. It is a well-known European pest and very likely came to this country with apple seeds imported from France, there being considerable import of such material for growth of seedling stock in this country. The investigations conducted by the Bureau of Entomology in Pennsylvania last year have demonstrated that this insect has spread in destructive numbers into orchards in that state and in some orchards at least one third of the crop was destroyed by it.

Among the newly established insect pests of subtropical fruit perhaps the most important is *Pulvinaria psidii*, which is one of the

set pests in southeastern Asia on citrus and other subtropical fruits. This insect has in recent years been introduced with nursery stock into Florida, and has already been widely distributed by one of the leading nursery firms of that state. It is now known to occur in several localities in Florida, and has been particularly damaging to fig trees at West Palm Beach, Miami, and some other points.

The *Aleyrodes howardi*, related to the white fly, has recently become established on the east coast of Florida, having been brought over on nursery stock from Cuba, where it seems to be a native.

The oriental scale pest (*Conchaspis agracci*) has become established in figs at Miami and possibly elsewhere in Florida.

The mango seed weevil (*Cyrtorhynchus mangiferæ*) has come in very commonly in mango seeds imported for planting during the past year. A warning circular has been issued on this insect, and it is to be hoped that it has not escaped in Florida. Two important mango scale insects have been brought in on shipments of trees to this country, and are still in existence in Florida, and it is doubtful whether they will be exterminated.

Mr. Woglum's eastern explorations during the past year, which have been so successful from the standpoint of the introduction of precocious enemies and parasites, have fully demonstrated that the white fly is an introduced insect, its native home being the citrus region lying south of the Himalayan mountains, extending from India eastward across China. In this region, Mr. Woglum not only found the white fly commonly but also some of the fungous enemies of this insect, which are now established in Florida, and also control by parasitic and coleaceous enemies.

The records above given sufficiently emphasize the risk which always attends foreign plant introductions, and particularly where such are new and come from regions which have been hitherto more or less commercially isolated.

DANGEROUS FOREIGN DISEASES LIABLE TO BE IMPORTED ON PLANTS

BY DR. PERLEY SPAULDING, Office of Forest Pathology, Bureau of Plant Industry,
U. S. Department of Agriculture

This paper will deal very largely with but two diseases from which this country is in very immediate danger at present. These are the white pine blister rust and the potato wart disease. Besides these will be mentioned only tree diseases, as the speaker is more familiar with

this type of trouble than with those of other kinds of plants. The horticultural inspector is especially interested in the field characters of these various diseases.

The chief field characters of the white pine blister rust are:

(1) A swelling of the main stem usually where the first branches are given off. This swelling usually begins very abruptly at the point of insertion of the branches upon the main stem and tapers gradually downward. It may also extend upwards in the stem and also outwards in the lateral branches in very marked cases. The disease is characterized by the swelling being almost exclusively in the bark tissues, not in the wood of the stem; that is, if a sharp knife is taken and a suspected tree which has this type of swelling is split carefully down the middle through the swelling, it will be seen that the bark in the swollen portion is from one to several times thicker than the normal bark of the same tree, but the wood of the stem is not swollen at all.

(2) Trees three or four years of age are very apt to have a stunted appearance. The tree very often consists of a bare stem bearing an abnormally thick tuft of needles at the top and without lateral branches. Oftentimes, too, the growth in height is decidedly less than that of healthy trees.

(3) A coarse yellow mottling of the bark of the stem and of young needles is a rare but very characteristic symptom of this disease. It has been found by the speaker but twice: once in a lot of trees set out in the field and once in trees in the greenhouse.

(4) Older trees, five to ten years or more of age, which have had this disease and have borne fruiting bodies in preceding years have an abnormally thick scaly bark upon the stem at the affected parts. Healthy young trees never have scaly bark before they are from 15 to 20 years of age. The occurrence of scaly bark upon stems of less than this age is a very good symptom of this disease.

(5) Finally may be mentioned the actual presence of fruiting bodies upon the affected stem. These fruiting bodies are so characteristic that no one need to be confused by them. They are also so well described in my publications that they will not be mentioned further.

This disease is caused by a fungus which has an alternate stage of growth upon the leaves of *Ribes*. The disease can not spread from pine to pine, but is produced upon healthy pines only by the spreading of the fungus from diseased *Ribes* leaves to the pines. This gives a very fair chance for controlling the disease so far as it has yet been introduced into this country. While the disease affects our eastern white pine especially, it is not limited to that single species. It also is known to attack two of the western white pines and it presumably may attack

of them. The danger from importations then is not limited to the eastern section of the country, but is more or less general throughout the country. As has been stated in my publications upon this disease, several millions of young white pines which were affected with this disease have been imported into the eastern part of this country. Twenty-five per cent or more of the total number of diseased trees which have been imported have come from a single German nursery. The importations from this nursery have for the past two years been reduced to almost nothing, that is there have been only one or two importations each year from this nursery. The disease, however, has been imported from a number of French nurseries.

The great danger at present is in the continued irresponsible importation of diseased plants without the horticultural inspectors being aware of such importation. The disease is known to have been present in the country since 1903 upon diseased trees, but in every instance where these early importations have been found, *Ribes* have been absent from the immediate vicinity of the affected trees, so that the disease has not spread. This is entirely good luck, however. The speaker's experience in making inspections has proved beyond any doubt that a single inspection of a diseased lot of trees never can be expected to result in the removal of all affected trees, that is, repeated inspections must be made. This soon costs more than the total value of the entire shipment of seedlings.

The second disease from which we are in great danger is that known as the potato wart. This disease is already prevalent in Newfoundland and one or two small adjacent islands. Canada has already quarantined against the movement of potatoes from these islands to the mainland. This means that the United States is bound to receive a surplus potatoes from this district. This disease is characterized by transformation of the developing tubers into irregular warty black masses which have no resemblance to the original potato. The value of the tuber is entirely destroyed. The most serious feature of this disease is that the organism causing it may live in the soil of an infected field for at least six years without a single crop of potatoes being grown during that time. This practically means that a field once infected will remain infected. Should this disease become established in this country, the potato industry will ultimately be doomed so far as we can judge at present.

A second European blister rust has been imported into this country lately. This is the one occurring upon Scotch pine, known as *Dothium pini*. So far as we can judge, this is the most prevalent of the European diseases of this character. It affects not so much the younger trees as it does the older ones, although it is serious where it

does attack the young trees. A specimen of this was sent to the speaker by one of the keenest of the Eastern nurserymen. This tree had been in his nursery for three years, and was originally imported from Europe.

Still another disease which has entered this country already is caused by one of the Japanese cedar apples. It was imported into the State of Connecticut upon the Japanese cedar and was there discovered by the Connecticut authorities. This has its alternate stage upon the Japanese pear and the quince. The pear industry of an entire province in Japan was threatened with extinction by this disease until the connection between the fungus upon the pears and the cedar apple was determined. The removal of cedars from the vicinity of the orchards apparently has quite largely controlled the trouble. It is not known at present whether this particular disease will attack American species of pear or of cedar, but this disease is one which should be watched until some definite information about it is obtained.

Another disease, known as the European pine twister, caused by one of the blister rusts known as *Cacoma pinitorquum*, may be considered dangerous. This attacks especially young trees varying in age from newly germinated seedlings up to 20 and 30 years, and in exceptional cases even 40 and 50 years of age. This has its alternate stage upon the European aspen and is apparently very prevalent throughout the European countries. The attacks of this disease where the branches are not killed, result in a twisted growth from which it receives its name. It results in the crippling of the tree so that in future years it is practically useless for timber. This disease is one about which little is known in connection with American species. It is not known to attack American species in either stage, but until definite information upon this point is obtained this should be kept from entering the country.

Finally may be mentioned the European oak mildew, which has been causing very considerable alarm throughout Europe because of its extreme attacks upon the European species of oak. It was first noted in 1907 in France, in 1908 it was prevalent throughout Europe except in the northern countries. It was so virulent in its attacks that in many places the entire undergrowth and lower branches of large trees to a height of about six feet were white with the mildew upon the leaves. The origin of this disease is not known at present, and until this is known this disease should be especially watched for in importations.

In these remarks the speaker has confined himself largely to the diseases, as information upon the diseases of other classes of plants is not immediately available.

MR. HEADLEE OF KANSAS: This is a long list of troubles for which the inspector must look, and personally I am in need of available information touching their relative importance. A publication taking their recognition marks under different conditions, their virulence, their life economy, and their frequency on incoming stock, which could be used as the inspector's handbook, would greatly increase the efficiency of the service and afford correspondingly greater protection.

MEMBER: Mr. Headlee's suggestion for a hand-book is just what I have had in mind. I notice that out of six diseases, three or four of them are on the Conifer. I think that a little hand-book of colored illustrations will give the inspector something else to look for besides the San José Scale, because you can find that too easily. We want something we cannot find so readily.

MR. FERNALD OF MASS.: I had a little personal opportunity to see the white pine blister rust, but not enough to cause me to become very familiar with it, and I have had an opportunity to look over some of the papers which have been published on the subject, both in this country and in Europe, but there is one point which I have not seen brought out very definitely or very positively, and it might be of interest to have that brought up at this time. Exactly how much damage as regards the life of the tree does this disease cause? Even when we find it at the age of three years or thereon and trees of ten years of age, which still have the disease, does it ultimately kill the tree, or does it result in a crippling merely of the tree, or what can we expect of it, if it is left to take care of itself?

MR. SPAULDING: As a general thing so far as my experience goes, it kills all trees. Those trees that live to an advanced stage are rather exceptional. Usually quite a number of affected trees die the first year, and two or three cases live over until the next year, and they decrease still more the next year, but there may be some vigorous cases that live longer, up to possibly twenty years of age; but the significant fact there, is, according to a French writer, that when a tree reaches an age of twenty or thirty years, it is almost sure to be broken over by the wind, so that unless the tree entirely outgrows it, it is finally killed. It only attacks, so far as we know, one-year-old wood. It may attack old trees.

The meeting then adjourned.

(To be continued)

PROCEEDINGS OF THE ATLANTA AND WASHINGTON MEETINGS OF THE COTTON STATES ENTOMOLOGISTS

For the purpose of considering the various cotton boll weevil quarantine regulations now in force in the various states with a view of securing uniformity, the Association of Cotton States Entomologists met at Atlanta on December 5 and 6, and at Washington on December 29. The following resolutions and recommendations were unanimously adopted:

RECOMMENDATIONS IN REGARD TO GENERAL PRINCIPLES OF LAW

I.- Legislative enactment to provide for quarantine under an official Board of not over five to constitute a responsible body, which shall be charged with formulation and administration of all quarantine regulations against insect pests and plant diseases.

The law should provide competent State Entomologists of proper training and experience.

II.- All specifications of dangerous insects, plant diseases, etc., and all regulations relating thereto, shall be adopted and published by said Board, and shall be subject to change upon proper public notice and announcement.

III.- Law should provide for suitable means of prosecution of violators of regulations and fix penalties therefor, including fine or imprisonment, and confiscation of material.

IV.- Law should give police power to authorized parties administering quarantine.

The report of the Committee appointed for the purpose of formulating a schedule of articles to be restricted and exempt, was read and each item discussed. The following resolutions were adopted:

RECOMMENDATIONS FOR QUARANTINE RESTRICTIONS APPLYING TO ARTICLES ORIGINATING WITHIN QUARANTINE AREA

1. Seed cotton.
2. Cotton seed.
3. Seed cotton sacks, cotton seed sacks, and cotton pickers' sacks, any of which has been used within eight months for any of the purposes indicated.
4. Cotton seed hulls, between August 1 and December 30.
5. Spanish moss and corn in shuck between October 1 and June 30.

6. Living weevils, or weevil stages, or weevil work, in possession of any person outside of the infested territory except a qualified Entomologist.
7. Household goods containing any of the foregoing during the period of quarantine applying to each.

The following resolutions were unanimously adopted at the Washington meeting, December 29, 1911:

That the Entomologists of this Association take concerted action with regard to the cotton leaf caterpillar, by sending all reports of the occurrence of the pest as soon as received, to W. D. Hunter, of the Bureau of Entomology, which reports shall be compiled and issued in circular letter on the first of the month following, or oftener.

That it is the sentiment of the Association of Cotton States Entomologists that the establishment of a cotton free zone of any width whatever, is entirely impracticable and unfeasible, and would result in an economic upheaval, regardless of any known method of taxation or reimbursement.

That a brief of the resolutions adopted at the Association of Cotton States Entomologists at the Atlanta and Washington meetings be printed in the JOURNAL of ECONOMIC ENTOMOLOGY.

That the Secretary be instructed to give to the press the resolutions adopted at the Atlanta and Washington meetings.

The Chair was instructed to appoint an executive committee, composed of three members of this Association. This Committee shall fix the place and time for the next meeting of this Association.

A. F. CONRAD,
Secretary.

INSPECTION AND CERTIFICATION OF FRENCH NURSERY PRODUCTS

By C. L. MARLATT

Attention has already been called in this JOURNAL by Dr. Howard to the French nursery inspection law of 1910.¹ The official journal of the French republic, of May 13, 1911, publishes, over the signatures of the president of the republic, the minister of agriculture, and the minister of finance, a decree dated May 1st, 1911, governing the charges for the inspection of nursery products for insect pests and plant disease; and giving the classification, and provisions for the

¹JOURNAL Econ. Ent., Vol. 3, p. 499, December, 1910.

appointment, of the different grades of inspectors provided for in the nursery inspection law just referred to.

The law of 1910 consists of Article 9, of the general budget and provides that the cost of inspection by authorized agents of the ministry of agriculture shall be collected from the establishments which have asked for such inspection. This cost is apportioned, as follows: A fixed annual tax of 25 francs is assessed on each nursery establishment which has requested examination and certification of its stock; and the additional expense is apportioned to such nursery firms according to the value of the stock which is to be certified. Provision is also made for the assessment and collection of the latter item of the tax in case voluntary reports from these firms are not submitted.

Regulations are published indicating the conditions and methods under which any nurseryman may have his stock inspected. The government, however, does not assume any responsibility for itself or its agents in the matter of inspection and certificates, in so far as to guarantee the acceptance of the latter by foreign countries.

This inspection service is divided into two sections: one, relating to plant diseases; and the other to insect pests. Provision is made for three classes of inspectors. The chief inspectors are the two officers of the department of agriculture in charge respectively of the departments of plant diseases and insect pests. These officers have the general direction and control of the service in their respective departments. The actual work of inspection is carried out by subordinate officials under two titles: first, temporary agents, or inspectors, who are to visit the various nursery establishments and conduct the inspections; and, second, minor temporary agents, if such be needed, who are to act as local aids to the inspectors proper. Inspectors of each of these two classes are provided for both plant diseases and insect pests. The provisions as to qualification of these inspectors, namely the educational requirements and practical experience, indicate a fairly high standard.

The working details for carrying out the inspection, as indicated by these recent decrees, call attention again to the weakness of the law of 1910, namely, that there is nothing obligatory in the inspection service, making it necessary for all nursery companies in France to be examined and certified. Such inspection and certification is only made on demand where the exigencies of the business of the firm seem to require it. It is therefore apparently very possible for much nursery stock to be accumulated from non-inspected nurseries for export

DUTCH INSPECTION SERVICE

The following excerpt from a letter received through Dr. L. O. Howard and published at his suggestion, will be of interest to many entomologists and nursery inspectors.--Ed.]

"The nurserymen of Holland, for obtaining the certificates for their shipments abroad, are by the Chief of the Phytopathological Service required: 1. To have their nurseries once or more than once duly inspected during the last season of growth. 2. To have the stock before shipment another time examined and, if necessary, selected.

"Both inspections of the grounds, and of the consignments, are executed by my officers. In consequence the delivery of the Certificates does not depend on the inspection only of the nurseries; also the stock ready for shipment is examined.

"For each consignment approved a certificate is delivered similar to the following:

[Duty stamp.]

No.

The undersigned, declares that the
at
marked
containing
grown in
are destined for
and that, after due examination, the State Entomologist and Phytopathologist of Holland
has found them free of San José Scale, peach yellows, rosette, or any other dangerous
insects or plant diseases, that might be transferred on nursery stock to other nurseries or
to the orchard;

No nests of Brown Tail Moth have been found in the nurseries.

CERTIFICATE.

The State Entomologist and Phytopathologist of Holland at Wageningen affirms the
correctness of the preceding declaration.

Wageningen.....

[Service stamp.]

.....
State Entomologist and Phytopathologist
of Holland.

"This form is chosen on account of our Stamp-act. A declaration undersigned directly by myself would be submitted to a higher stamp duty. Now the certificate consisting of a declaration of the nurseryman, which is confirmed by the Chief of the Phytopathological Service, the cost of the stamp is relatively small.

"Thus, on the certificate of our Phytopathological Service, mention is made of the names of the consignor and of the consignee; then of the nature of the package, the number of boxes or bales, and their marks and contents. Besides the stamp for which duty is paid (printed at the top of the certificate) and the stamp of the Phytopathological Service (printed by myself or my substitutes at the bottom of the paper) a number is put on the certificates. Being prepared in this way the certificates are undersigned by myself or by one of my two authorized principal assistants. A facsimile of these signatures is inserted in the number of the JOURNAL OF ECONOMIC ENTOMOLOGY, mentioned above.

"The certificate bearing upon the complete consignment, each box or bale, belonging to it is labelled with a so-called copy certificate of the following type:

COPY-CERTIFICATE OF EXAMINATION OF NURSERY STOCK.

To whom it may concern :

This is to certify that the nursery grounds of at , Holland, were inspected by my officers for the Season 19.../19... that the growing stock gave no indication of any species of insects designated as dangerous pests by the commission, and was apparently healthy in every respect.

(Signed)

DR. J. RITSEMA BOS,
State Entomologist of Holland.

"The certificate delivered for the complete consignment is often directly forwarded by the nurseryman to the consignee; but now and then it may be subjoined to the invoices.

"Sometimes a Dutchman delivers stock originating from foreign countries (for instance from Belgium) and expedites it from a foreign (f. i. Belgian) harbour. Such stock not being examined by the officers of the Dutch Phytopathological Service, now the nurseries from which it originates, being inspected by them, none of the above mentioned papers are subjoined to the consignment. Consequently for assuring himself that a shipment consigned by a Hollander really comes from Holland and has been controlled by our Phytopathological Service, the American expert should look after the official certificate duly provided with stamps, number and signature and after the copy-certificates attached to each of the boxes or bales. Only when either of the declarations are present, it is certain that the stock is inspected by our Phytopathological Service and that the nurseries, from which it originates, are continually supervised by this Service.

"Of course we always are mindful of maintaining the good renow our Dutch certificates enjoy in America, and therefore no trouble

ered in the execution of the inspections. But at the same time I should be pleased to observe, that the American authorities by looking over the declarations belonging to each consignment from a Dutchman should ascertain for themselves the origin of the shipment in question.

"It may be possible, that some copy is lost from a box or bale, but this will not be the case with all copies of the shipment, and anyhow the original certificate belonging to the whole shipment must be present.

"I always will be obliged for the communication of all contravention of the rules mentioned above.

"Might some alteration be settled either in the text of the copies or in that of the certificate itself. I hope to inform you at an early date."

With many kind regards,

Yours very truly,

J. RUTSEMA BOS.

NOTE ON THERONIA FULVESCENS

By J. M. ALDRICH, *Moscow, Ida.*

A reperusal of some back numbers of the JOURNAL leads me to offer a belated note on the above species as a parasite of *Neophasia menapia*, the white butterfly of western pine and fir. Fiske and Thompson (JOURNAL, 2: 455) mention *fulvescens* as "the most common parasite of the gypsy moth native to America," but add that it has been recorded both as primary and secondary in some of its host relations. At the time of the publication of that item I intended to add the following, but postponed action until it was for the time forgotten.

Neophasia menapia was for some years after its discovery an excessively rare butterfly, only a few specimens finding their way into collections. Later it was found once or twice in swarms in the western forests, and again it seemed to disappear. In this period I came to Idaho in 1893. Two years later it began to be noticeably abundant near Moscow, Idaho, and in 1896-7-8 it caused much loss in the forests of the northwest by completely defoliating pine and fir timber in considerable areas, while in all the intervening forests it was very abundant also. At this point *Theronia fulvescens* attracted my attention as a parasite of the butterfly, material reared by me from pupae of the latter being determined by the Bureau of Entomology. The parasite reached its maximum in 1898, at which time it swarmed in the woods in late summer in incredible numbers. In places the air

was full of them, and they made a very perceptible humming sound like a swarm of bees. At the University of Idaho, about seven miles from the forest, it was abundant, and on one occasion I collected 40 specimens by picking them off the walls of the administration building while going once round it— and this seven miles from where any of them matured.

The next spring the extermination of *menapia* seemed complete all over the northwest. In ten years afterward I think I saw only one specimen alive. Only in the last two or three years is it "coming back," and we seem to be at the beginning of another cycle of abundance.

I secured no other parasite of *menapia*, and *fulvescens* was present in millions, from which it would appear that the previous fluctuations of *menapia* may have been caused in the same way as the one described.

On account of the burning of my notes in a university fire, I am obliged to trust to memory, and it is possible that the year of extermination may have been 1899.

The parasite died out at once, and was not seen again for several years. It may have other hosts here, but no other caterpillar is abnormally abundant in our forests, so the numbers of the parasite of necessity fell at once almost to zero, on the disappearance of the principal host. I have never seen another case so striking of the effect of parasitism on both host and parasite. I have made no observations on *fulvescens* as a secondary parasite.

SOME ECONOMIC METHODS A HUNDRED YEARS OLD

By HARRY B. WEISS, *New Brunswick, N. J.*

In going over some old works on entomology, I was impressed by the similarity of some of the methods in use a hundred years ago and those of today. By this, I do not mean to imply that we have not gone forward in that length of time, but, rather that in many cases, we are still following the basic principles of the old methods.

When our grandfathers were troubled by wire worms, it was customary to bury beneath the soil, slices of potatoes stuck on skewers. These were pulled up every day and the larvæ thereon killed. These baits of course were stuck alongside of the infested plants. For fields overrun with injurious larvæ, it was recommended that the infested land be ploughed up and a flock of ducks or other poultry or a drove of pigs turned in, and drenching a field with stable urine was supposed to kill all grubs in addition to acting as a fertilizer. With

going into details, I may mention the present day use of poisoned lime for fall and spring ploughing and heavy applications of kaimit or borate of soda, all of which have their uses in controlling injurious insects.

For aphids on beans, the plants were topped as soon as the lice appeared and the cut-off portions either burned or buried and against the hop plant louse, women and children mounted on step-ladders were employed to rub the infested leaves between the thumb and forefinger, hard enough to kill the lice but not enough to injure the tissue. Concerning an insect like the cockchafer, I found a note to the effect, that in 1785 a French farmer employed a number of children to collect these insects at two liards a hundred, with the result, that fourteen hundred were turned in at the end of several days. As we all know, hand collecting is still resorted to, but we have evolved better methods for controlling aphids, than that of the thumb and forefinger.

Against cattle flies, the herdsman kindled fires, the smoke of which drove them away and it is said that the cattle, when badly infested, would run towards the smoke. Now, of course, the market is full of fly mixtures, but we are still using smoke and various preparations as deterrents. I recall being at a small park along Lake Erie, one night several years ago and the place was covered with a pall of smoke, originating from piles of burning leaves. It was either that or mosquitoes. It is needless to state that modern mosquito extermination methods hadn't reached there at that time.

Coming to household pests, particularly the bed bug, the following formula must certainly have been effective.

"Reduce one ounce of corrosive sublimate and one ounce of white arsenic to a fine powder; mix with one ounce of muriate of ammonia, two ounces each of oil of turpentine and yellow wax and eight ounces of olive oil. Put all these into a pipkin placed in a pan of boiling water and when the wax is melted, stir the whole in a mortar till cold." I suppose this combination was to be used as an insect powder of today. For fleas, the old English preventive is quoted:

"When wormwood hath seed, get a handfull of twaine
To save against March to make flea refrain;
Where chamber is swept and wormwood is strown,
No flea for his life dare abide to be known."

Probably this was a household rhyme, memorized during childhood.

For killing house flies, solutions of the following were placed in saucers; corrosive sublimate, King's yellow (a sulphide of arsenic), and Quassia. Going back to traps again, when earwigs became

troublesome in the garden, snares were set. These consisted of ox hoofs, hog hoofs, bowls of tobacco pipes and lobster claws. These were stuffed with straw and attached to sticks, the sticks being stuck in the ground adjacent to infested plants. At the approach of daylight, the earwigs were supposed to crawl into these receptacles and allow themselves to be shaken out and killed later. It certainly must have looked curious to see such an array as the above, staked around a garden.

For controlling grasshopper nymphs, a drove of two or three thousand sheep could be driven on the infested land, thereby trampling many to death and as for a first class pest like the Brown Tail Moth, during the year 1782—in many parishes near London, subscriptions were opened and the poor people employed to cut off the webs at one shilling per bushel. These were then burned under the supervision of church-wardens, overseers and beadles of the parishes.

From the foregoing, we can at least get an inkling of how the people of a hundred years ago stood in relation to some insect pests.

ASSOCIATION OF APIARY INSPECTORS OF THE UNITED STATES AND CANADA

On December 30th, 1911, in Washington, D. C., there was formed a temporary organization of the above name with a view to increasing the efficiency of apiary inspection and to bring about a greater uniformity in the laws and more active co-operation between the various inspectors.

A committee on permanent organization was formed to report at a meeting to be held in Cleveland, Ohio, in December, 1912, in connection with the meeting of the Association of Economic Entomologists. Professor Wilmot Newell, College Station, Texas, is Chairman of this Committee.

A standing committee was also appointed on legislation for the purpose of drawing up a law incorporating the necessary and desirable features. The undersigned was appointed Chairman of this Committee.

All apiary inspectors and official entomologists of the United States and Canada who are interested in the advancement of apiculture are invited and urged to join in this movement for an increased efficiency in the fight against the brood diseases. For the present it was decided to levy an assessment, \$1.00 per year, on each member to pay necessary expenses. It is hoped that arrangements may later be perfected for affiliation with the Association of Economic Entomologists. Requests for membership and the assessment may be sent to the undersigned.

Respectfully,

DR. BURTON N. GATES,
Amherst, Mass.,
Chairman.

E. F. PHILLIPS,
Bureau of Entomology, Washington, D. C.,
Secretary.

JOURNAL OF ECONOMIC ENTOMOLOGY

OFFICIAL ORGAN AMERICAN ASSOCIATION OF ECONOMIC ENTOMOLOGISTS

FEBRUARY, 1912

The editors will thankfully receive news items and other matter likely to be of interest to subscribers. Papers will be published, so far as possible, in the order of reception. All extended contributions, at least, should be in the hands of the editor the first of the month preceding publication. Reprints may be obtained at cost. Contributors are requested to supply electrotypes for the larger illustrations so far as possible. The receipt of all papers will be acknowledged.—Eds.

It may surprise a number of our subscribers to note that with this issue the JOURNAL appears under new auspices. The change is more nominal than real. The management of our Official Organ has been transferred from a voluntary, private company to the Association of Economic Entomologists. The change was made solely for the purpose of putting the publication upon a better business basis. It is now backed by the entire Association. There will be no material change in the general policy of the JOURNAL.

The recent conferences at Washington appear to have resulted in a practically unanimous agreement respecting a National Quarantine Bill, a problem which has been before entomologists, nurserymen and fruit growers for some years. The bill, in an amended form (H. R. 18,000), has been introduced and we are assured that the prospects of its passage are excellent. This is a matter, as all entomologists well understand, of great importance to agricultural interests of the country. It is surprising that some such bill was not enacted years ago. The East, in this respect, is decidedly behind the progressive West.

The Association of Economic Entomologists is much larger than the relatively small group of workers which assembled in earlier days. Conditions eminently satisfactory then are inadequate at the present time. We would call attention to the discussion at the closing session relative to the desirability of holding sectional meetings and our relations to affiliated organizations. Even with the strict adherence to time limitations, it was necessary to abstract a number of valuable papers, while the time then available was not sufficient for a full and thoroughly satisfactory discussion. This latter is one of the most valuable features of our gatherings and can be secured only by more protracted sessions or else by a greater division of subject matter. We have had for some years a Horticultural Inspectors' Association, and last month witnessed the organization of an Apiary Inspectors' Association. These represent only two of the special interests legitimately classed under Economic Entomology. We have in addition,

forest entomologists and city entomologists concerned primarily with shade tree pests, not to mention specialists working upon various groups, or those with common interests because of climatic or geographical conditions. No one man can hope to cover the entire subject in an exhaustive manner, and most will probably find greater profit by limiting the time spent at meetings to a few problems of paramount interest. The Association might well have several general sessions, possibly the entire mornings, the afternoons being broken up into special groups which might be designated as sections and presided over by officers of affiliated societies, by vice-presidents or even chairmen named informally. The main point is to assemble those interested in any special subject and provide for a full and free discussion and at the same time avoid a conflict of interests so far as practicable. Certain of these groups would necessarily vary from year to year and would be determined in large measure by the character of the papers submitted. No party would be better qualified to inaugurate this change than our Secretary, who could easily group the papers and submit a proposition for a few special sessions if conditions warranted, at the next annual gathering. We believe that some such modification would do much to unite allied interests and result in the continuance of one strong organization, with congenial sections or subdivisions. This is essential to a well supported official organ and in the long run must prove more satisfactory than a number of independent small organizations supported by entomologists restricting their activities to special lines.

Reviews

Ixodidae. By L. G. NEUMANN, Das Tierreich, 26 Lieferung, pp. XVI+169, 76 figs., R. Friedländer & Son, June, 1911.

After a long delay, presumably chargeable to the publishers, Professor Neumann's monograph of the ticks has been issued. The main criticism to be made is of the fact that the work is not up-to-date; in fact, the publication is really about three years behind, as 1908 is the last year given in the references to literature. Professor Neumann is probably in no way responsible for this delay nor for the poor binding of the fascicle.

Professor Neumann is generally considered a very conservative systematist, hence the conservatism shown in this publication is to be expected. The classification given in the present work is practically the same as that proposed by Neumann in an earlier work. The author prefers to treat the ticks as a family rather than to place them in a superfamily as done by Banks and several other authors. The family is divided into two subfamilies Ixodinae and Spelaeorhynchinae. The former includes all of the forms usually considered as ticks and the latter contains one genus.

new species, *Spelaorhynchus precursor*, a peculiar bat parasite from Brazil. The family Ixodinae is divided into sections, Ixodini and Argatini corresponding to the families Ixodidae and Argasidae of other authors. The section Ixodini is divided into four tribes, Ixodaria containing the genus Ixodes; Rhipicephalaria containing the genera Rhipiceptor, Margaropus and Hyalomma; Amblyommataria with the genera Amblyomma, Aponomma, Dermacentor and Haemaphysalis. Few systematists will agree with this classification in all respects though it is not vastly different from the arrangement proposed by some other workers. It will be seen from the long list of genera that Neumann in this publication, as in earlier works, divides the family Ixodinae into ten genera. In these ten genera he recognizes 206 valid and 170 doubtful species. He divides 26 of these species into 66 subspecies. A considerable number of species has been described since the preparation of the manuscript for this treatise.

The monograph contains tables for the differentiation of the genera and species, as well as the higher groups, and fairly complete synonymy under each species. The systematic arrangement of the hosts of ticks with the list of the species of ticks found upon them will be found very useful. This list is, of course, incomplete owing to the many host records added in the last few years. Mention of the stages of ticks found on each host would have been a valuable addition to this list. The specific descriptions given are too brief in many cases to be satisfactory, and additional illustrations would have added materially to the utility of the work. Descriptions of the immature stages would also have been a valuable addition.

The standing accorded a number of species by Neumann is questionable. But a very few of these points, however, will be mentioned owing to the fact that these matters have been cleared up in publications, by various other authors, issued since the manuscript of the paper under review was completed. Neumann's variety *callosus* of *Ixodes hergatus* is a synonym of *I. canisuga* Johnston as has been pointed out by Banks. *Dermacentor parumpertus* is without doubt a distinct species and not a variety of *Dermacentor variabilis*. *D. occidentalis* is clearly a distinct species and not a variety of the European *D. reticulatus*. *D. nigrofuscatus* Packard, as Mr. Banks has pointed out, is a distinct species of *Dermacentor* and not a *Haemaphysalis* as considered by Neumann. There is no doubt that Packard's *chubbsi* is a valid species of *Haemaphysalis*. Neumann places the genus *Boophilus* as a synonym of *Margaropus*. Since reviewing Part II of Nuttall and Warburton's monograph of the Ixodoidea (JOURNAL OF ECONOMIC ENTOMOLOGY, Vol. 4, pp. 564-565, I have had the opportunity of studying a good series of both sexes of *Margaropus lounsburyi* in comparison with specimens of the North American fever tick. To say the least, the question as to what generic names should be used for our North American fever tick and other closely allied forms is a debatable one. The females of *annulatus* and *lounsburyi* do not seem to present good characters for separating them into two forms. The males of the two forms, however, show striking differences. Nuttall and Warburton and Dönitz place *annulatus* in the genus *Boophilus*, the genus established for this species by Cooper (Clarke in 1891) and *lounsburyi* in the genus *Margaropus*, while Neumann considers that both species belong to the same genus *Margaropus*. Banks holds the same view as Neumann. Many economic workers probably accept the ideas of each of these groups of systematists and if some fixed opinion is not secured we may expect to find the common use, in literature, of both generic names for the cattle tick.

In the whole, the work under review will be found very useful and should be on the shelves of every student of this group of animals.

F. C. BISHOPP.

Current Notes

Conducted by the Associate Editor

D. E. Merrill has been appointed assistant in entomology at the New Mexico Agricultural Experiment Station and College.

G. P. Weldon has resigned as field agent at Grand Junction, Colo., to become deputy state entomologist, with headquarters at Fort Collins.

Mr. L. M. Peairs, formerly assistant entomologist at the Kansas Agricultural Experiment Station, has accepted a position at the University of West Virginia, and will carry on instruction and experimental work in economic entomology.

The announcement has been published that the Second International Congress of Entomology will be held at Oxford, England, August 5-10, 1912. Dr. Malcol. Burr, 11 Chandos Street, Cavendish Square, London W., is secretary of the executive committee.

According to *Science*, Professor Newstead has returned to England from Africa, where he has been studying sleeping sickness in connection with the commission from the Liverpool School of Tropical Medicine.

Colonel William C. Gorgas, well known for his important practical work in abolishing mosquitoes in Havana and in the Canal Zone, has been elected president of the Ninth Congress of American Physicians and Surgeons, which will meet in Washington in 1913.

Mr. J. M. Swaine, lecturer in biology at Macdonald College, P. Q., has been appointed assistant entomologist of the Dominion Experimental Farms at Ottawa, and will have charge of the work on forest insects.

Professor J. H. Comstock, professor of entomology in Cornell University, gave an illustrated public lecture before the Entomological Society of America at the Cosmos Club, Washington, D. C., on Wednesday evening, December 27th, the subject being "On Some Biological Features of Spiders." Professor Comstock has recently been elected an honorary fellow of the Entomological Society of London.

Mr. E. W. Rust, A. B. (Stanford), formerly of the Southern California Laboratory at Whittier, arrived in Peru on December 6th, 1911, under contract with the Peruvian Government for a year and a half, as first assistant entomologist. His address will be Piura (Piura), Peru, S. A. The government entomological force in Peru now consists of Mr. C. H. T. Townsend, Entomologo del Estado; Mr. E. W. Rust, Primer Ayudante al Entomologo del Estado; and Mr. F. G. Sommerkamp, Asistente. The work on cotton plagues is being pushed, and it is proposed to erect a laboratory building the coming year.

F. W. Terry, for seven years assistant entomologist of the Hawaiian Sugar Planters' Experiment Station at Honolulu, T. H., and a member of this Association, died November 7, 1911, of pneumonia, at Roosevelt Hospital in New York City. Mr. Terry once spent several months in Hongkong while some insect parasites were being procured in the East Indies.

Mr. L. H. Worthley, for several years assistant forester of Massachusetts in charge of the gypsy moth work, entered the employ of the Bureau of Entomology January

and on the 4th sailed for Italy, where he will join Mr. W. F. Fiske and Mr. H. S. Gahan, who are investigating the gypsy moth parasites in Europe, and also making investigation and collection of the parasites of the alfalfa weevil. Mr. Worthley will make observations on the gypsy moth and study field conditions in Europe.

The Porto Rico Board of Agriculture has been organized with W. V. Tower, formerly of the Porto Rico Agricultural Experiment Station as entomologist, and C. E. Burdett of the Bureau of Entomology as assistant. Mr. Tower will enforce quarantine regulations against importations, and the construction of three fumigating houses has been authorized. Mr. Hood will attempt to introduce the natural enemies of the white grub into Porto Rico.

Congressman J. Hampton Moore has introduced in the House of Representatives (H. R. 14210) appropriating \$80,000 for work against the chestnut blight disease. This appropriation is to be placed in the hands of the Secretary of Agriculture, who is expected to work in co-operation with various state authorities, and \$50,000 is to be expended in studying the relations of insects to the spread of the disease. A similar bill has been introduced in the Senate by Senator Penrose.

At the twenty-second annual Meeting of the Western Association of Nurserymen, held at Kansas City, December, 13th and 14th, 1911, papers were read by Prof. S. J. Hunter, on "Interstate Co-operation" and by Dr. T. J. Headlee, on the "Relation of the Agricultural College to Nurserymen."

Professor A. J. Cook, who has recently been appointed horticultural commissioner of California, has announced his program of operations, which includes a campaign to free the nurseries of the state of all pests. Professor H. S. Fawcett of Florida has been engaged to take charge of work for the suppression of fungous fruit diseases, and Professor H. A. Weinland will be sent to Honolulu to attempt the eradication of the Mediterranean fruit fly, which it is feared may be brought to California from the Hawaiian Islands.

Mr. T. C. Barber, who has been in charge of the laboratory for the investigation of sugar cane insects of the Bureau of Entomology at New Orleans, resigned on January 1st to accept the position of Director of Branch Stations of the Sugar Planters' Experiment Station at Tucuman, Argentina. He has been succeeded by Mr. T. E. Holloway of the Bureau.

Mr. E. S. Tucker, of the Bureau of Entomology, who has been located at Dallas, Texas, resigned on January 1st to accept the position of Assistant Entomologist in the Louisiana Experiment Station at Baton Rouge.

Mr. A. H. Jennings, formerly of the Sanitary Department of the Isthmian Canal Commission, who came into the service of the Bureau of Entomology on August 1, 1911, will be located in South Carolina during the coming season and engaged in an investigation of the possible transmission of pellagra by insects. Mr. W. V. King will be associated with Mr. Jennings in this work.

Messrs. Andrew Rutherford and E. H. Strickland, Carnegie Scholars, of England, who have conducted studies at the Bussey Institution and at Cornell University respectively for some months, left New York early in January to attend an agricultural conference in Trinidad, West Indies. They will return to the United States in a short time. After a brief inspection of the work against citrus insects in Florida, they will proceed to Dallas, Texas, where they will be associated with the section of Southern Field Crop Insect Investigations throughout the season.

Mr. M. M. High, engaged on truck crop and stored product insect investigations, working on the onion thrips at Knox, Indiana, during the summer, is studying the same problem, together with others, at Brownsville, Texas.

Mr. Thomas H. Jones, engaged in investigations of truck crop and stored product insects, has resigned from the Bureau of Entomology to accept a position with the Sugar Producers' Experiment Station, located at Rio Piedras, Porto Rico.

Mr. John E. Graf has been appointed agent in the investigation of sugar beet and truck crop insects at Compton, California.

Mr. Warren Knaus, who for many years has been recognized as an authority on certain families of the Coleoptera, has been appointed inspector of apiaries on the staff of the State Entomologist of the University of Kansas.

Mr. Harry B. Kirk, of the Division of Zoology, Department of Agriculture, Harrisburg, Pa., has accepted a position as assistant in entomology at the Agricultural Experiment Station, New Haven, Conn., and will begin his work there about February 15th.

Mr. Henry F. Jenkins, a graduate of the class of 1911 and a former laboratory assistant in entomology of New Hampshire College, Durham, N. H., has recently been appointed assistant to Professor W. C. O'Kane in the work of suppressing the gipsy and brown-tail moths in New Hampshire.

Notice was issued in January by Professor Burton N. Gates for a convention of apiary inspectors of the Northeastern United States and Canada, to be held at Amherst, Mass., February 7th and 8th. The preliminary programme announced addresses by President Kenyon S. Butterfield, Dr. E. F. Phillips of Washington, Arthur C. Miller, Rhode Island, E. J. Crane, Vermont, Charles Stewart, New York, A. W. Yates and W. E. Britton, Connecticut, and B. N. Gates, Amherst, Mass. We hope to give an account of this convention in a later issue of the Journal.

Mr. J. L. Webb, formerly of the Division of Forest Insect Investigations, Bureau of Entomology, will, after February 1, 1912, be engaged in rice insect investigations in the Division of Southern Field Crop Insect Investigations, Bureau of Entomology. His address will be Crowley, Louisiana.

Irving W. Davis, a graduate of the Massachusetts Agricultural College in 1907, has been appointed, we learn from *College Signal*, instructor in pomology and entomology at Middlebury College, Middlebury, Vt.

